58428-1

STATE OF WASHINGTON

DATA SUMMARY & ANALYSIS

OF

1983 TRAFFIC COLLISIONS

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II — OVERALL STATEWIDE PROBLEM ANALYSIS

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STATEWIDE SUMMARY

Overview

In 1983 there were 106,597 total reported collisions. This figure represents a 2.0% decrease in collisions compared to the 1980-1982 three year baseline period. In 1983, 705 persons were killed in 635 fatal collisions. These figures represent a drop of 19.1% in the number of persons killed and a 18.2% drop in the number of fatal collisions compared to the baseline. There were 40,273 injury collisions, injuring a total of 58,317 persons, in 1983. Those figures represent a 0.9% drop in injury collisions and a 1.4% drop in the number of persons injured. The 65,689 property damage accidents represented a decrease of 2.5% compared to the 3 year baseline period (Table 1-1).

Table 1-1

	Years				Prev. 3 Yr. Average	% of Change '83 - 3 Yr.
IMPACT	1983	1982	1981	1980	(80-82)	Average
Total Collisions	106,597	100,644	111,993	113,751	108,796	- 2.0%
Fatal Collisions	635	679	790	860	776	- 18.2%
Total Killed	705	757	872	984	871	- 19.1%
Injury Collisions	40,273	37,790	41,947	42,139	40,625	- 0.9%
Total Injured	58,317	54,789	61,083	61,532	59,135	- 1.4%
Property Damage Only Collisions	65,689	62,175	69,256	70,752	67,394	- 2.5%

Exposure

Motor vehicle travel was up 8.3% in 1983 over the 1980-82 baseline period. Motor vehicle registrations were up 1.0%. The number of licensed drivers increased 5.3% over the baseline period. The state's population increased 1.8%, to 4,285,100 (Table 1-2).

Table 1-2

	Years				Prev. 3 Yr. Average	% of Change 1983 to prior
EXPOSURE	1983	1982	1981	1980	(1980-1982)	3 yr. Average
**Motor Vehicle Travel	32,275.0	30,353.0	30,346.0	28,696.0	29,798.0	+ 8.3%
Motor Vehicle Registration	3,372,966	3,313,348	3,408,871	3,293,019	3,338,413	+ 1.0%
Licensed Drivers	2,867,032	2,774,212	2,732,722	2,662,659	2,723,198	+ 5.3%
State's Population	4,285,100	4,264,000	4,248,100	4,109,853	4,207,318	+ 1.8%

**In Millions

Rates

The 1983 motor vehicle traffic death rate decreased to 2.18 deaths per 100 million vehicle miles of travel. This was a decrease of 25.3% compared to the baseline average. The injury rate of 1.81 injuries per one million vehicle miles represented a 8.6% decrease over the baseline (Table 1-3).

Table 1-3

	Years				Prev. 3 Yr. Average	% of Change 1983 to prior
RATES	1983	1982	1981	1980	(1980-1982)	3 yr. Average
Death Rate (Deaths per 100M vehicle miles)	2.18	2.49	2.87	3.43	2.92	- 25.3%
Injury Rate (Injury per 1M vehicle miles)	1.81	1.81	2.01	2.14	1.98	- 8.6%

Fatalities by Status

Driver was the most common status of those who were fatally injured in motor vehicle collisions. This classification was attributed to 343 persons or 48.7% of those who died in 1983. This figure is down 16.1% from the 1980-82 3-year average. Motorcycle passengers represented the greatest percentage decrease, 57.9% over the baseline average. Motorcycle drivers were down 23.4% compared to the baseline (Table 1-4).

Table 1-4

Status	Years				Prev. 3 Yr. Average (1980-1982)	% of Change '83 - 3 Yr. Average
	1983	1982	1981	1980		
Drivers (does not include motorcyclists)	343	354	416	458	409	- 16.1%
Passengers	182	186	214	287	229	- 20.5%
Pedestrians	89	101	121	108	110	- 19.1%
Bicyclists	14	8	20	11	13	- 7.7%
Motorcycle Drivers	72	92	88	101	94	- 23.4%
Motorcycle Passengers	5	16	13	19	16	- 57.9%
Totals	705	757	872	984	871	- 19.1%

Traffic Collisions, Deaths, Injuries, Travel and Death Rate

After peaking at 1,034 traffic deaths in 1979, a downward trend started in 1980 and has continued through 1983. The 705 deaths recorded in 1983 was down 6.9% compared to 1982, and down 31.8% from the all time high recorded in 1979 (Figure 1-1). Motor Vehicle Travel, by contrast, has experienced a steady increase over the ten year period, with the exceptions of 1979 and 1980 when travel dropped slightly due to the sharp increase in the price of gasoline. 1983 recorded a high of 32.28 billion miles, up 6.3% over 1982 (Figure 1-2).

Washington's death rate of 2.18 deaths per 100 million vehicle miles of travel was once again the lowest in the state's history and down 12.4% from the 2.49 rate for 1982. Washington's death rate continued below the national death rate for the fourth consecutive year (Figure 1-3). Total reported collisions and injuries increased in 1983 after a sharp drop in 1982. However, the 106,597 collisions reported in 1983 was down 4.2% compared to the previous four year average. Likewise the 58,317 injuries reported last year was down 3.9% compared to the previous four year average (Figure 1-4).

Collisions by Type

Multiple vehicle collisions recorded a sharp increase (+7.8%) in 1983 over 1982. However, in comparing 1983 with the previous four year average, 1983 recorded a 3.5% reduction, so the slope has steadily decreased since 1975 (Figure 1-5). Single vehicle collisions continued a downward trend which was started in 1977 (Figure 1-6). Vehicle pedestrian collisions leveled off after experiencing a four year downward trend after four years of increases—1975 to 1978 (Figure 1-7). Vehicle -Pedalcyclist collisions experienced a sharp increase in 1983 recording 1,230 crashes, up 16.5% over 1982. For the ten year period vehicle-pedalcyclist collisions had experienced a fairly stable rate from a high peak in 1974 to a low in 1978 (Figure 1-8).

Traffic Deaths and Death Rates by County

In 1983 fatalities ranged from a high of 143 in King County, with a death rate of 1.5 (traffic deaths per 100 million vehicle miles of travel) to a low of zero deaths in Pacific County. San Juan County recorded the highest death rate, at 11.9, computed on two fatalities, followed by Ferry County which recorded a 10.9 death rate on six deaths.

Highways, Travel and Fatalities

In 1983, the interstate system was again the most traveled road system in the state, recording 8.053 billion miles up 6.6% from the 7.553 billion miles recorded in 1982. It also had the lowest death rate in the state at 0.92 based on 74 fatalities. This is down from the 1.10 rate of a year ago, and the lowest rate since 1978 when a rate of 0.91 was recorded.

In contrast, the county roads were traveled 6.368 billion miles and recorded a death rate of 3.99. Two hundred fifty-four (254) persons were killed on the county road system. County roads recorded an increase in the number of traffic deaths, 238 to 254 in 1983, a 6.7% increase and consequently an increase in the death rate from 3.94 in 1982 to 3.99 rate in 1983. Traffic deaths on city streets decreased by 5 for a decrease in the death rate, from 1.67 in 1982 to 1.51 in 1983. The death rate on the U.S. numbered routes were reduced substantially in 1983 recording 51 deaths, compared to 96 deaths in 1982, a reduction of 46.9%. In 1982 the death rate was 3.71 compared to 1.86 in 1983. Motor vehicle travel increased from 2.590 billion miles to 2.747 billion miles (Table 1-5).

Figure 1-1

TRAFFIC DEATHS 1974-1983

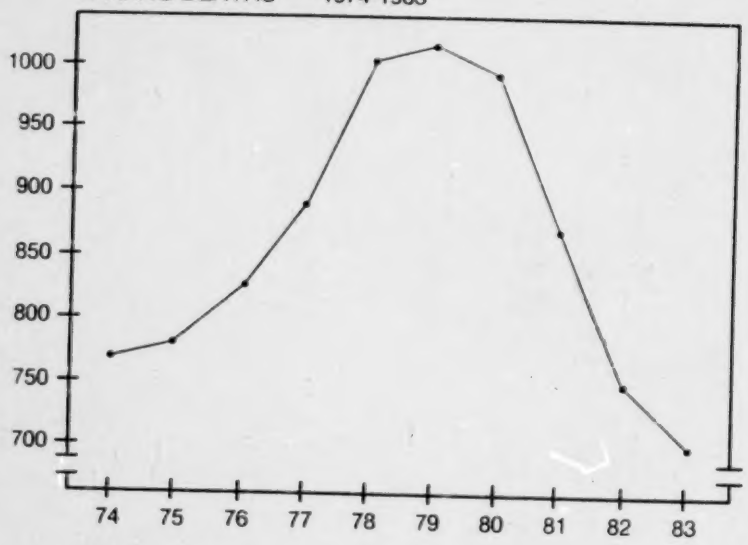


Figure 1-2

MILES TRAVELED (in billions)

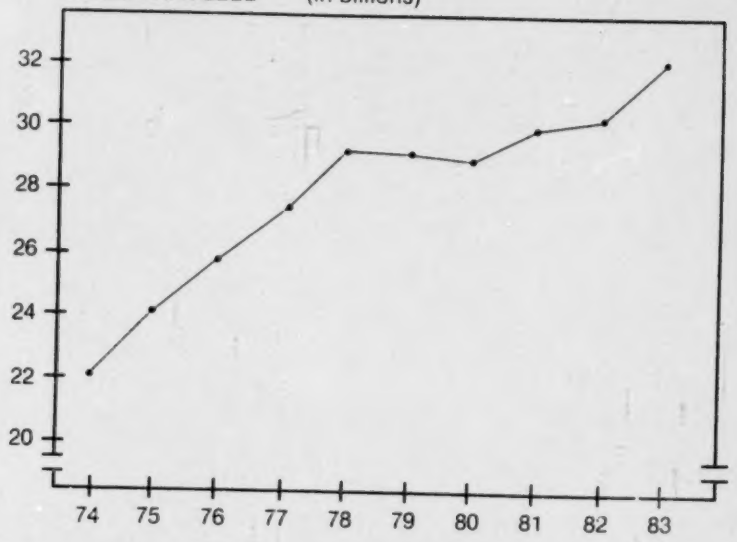


Figure 1-3

DEATH RATE
(per 100 million vehicle miles)

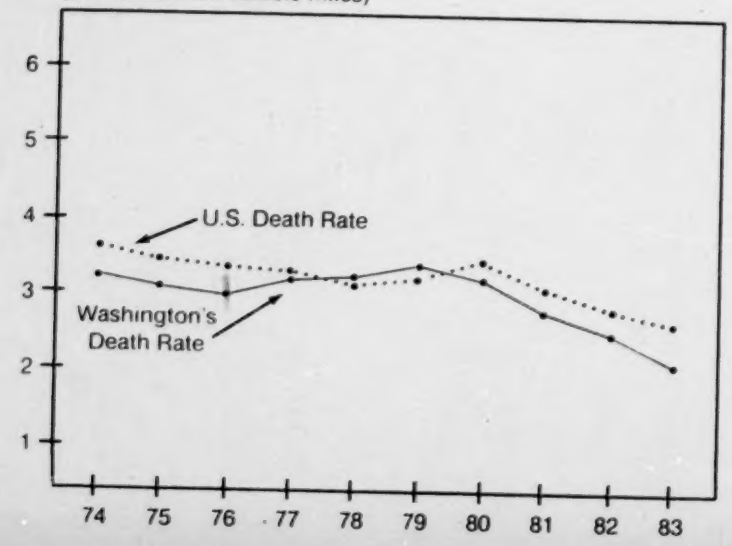


Figure 1-4

TOTAL REPORTED MOTOR VEHICLE TRAFFIC
COLLISIONS AND INJURIES (in thousands)

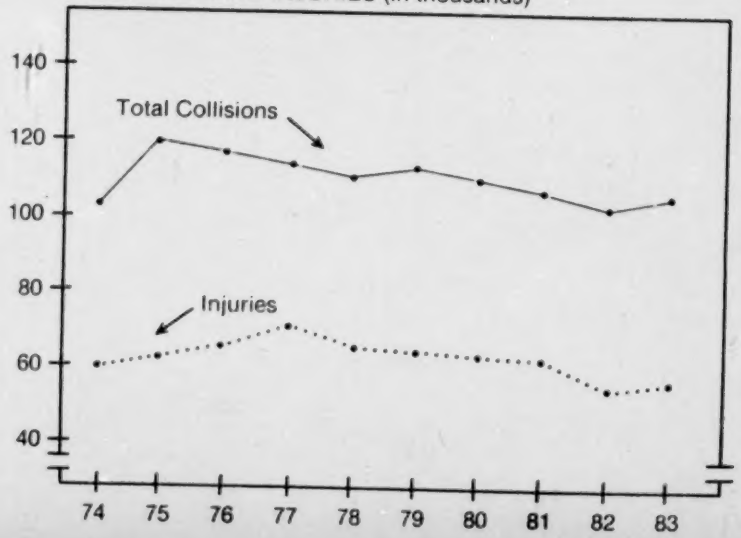


Figure 1-5
MULTIPLE VEHICLE COLLISIONS
(in thousands)

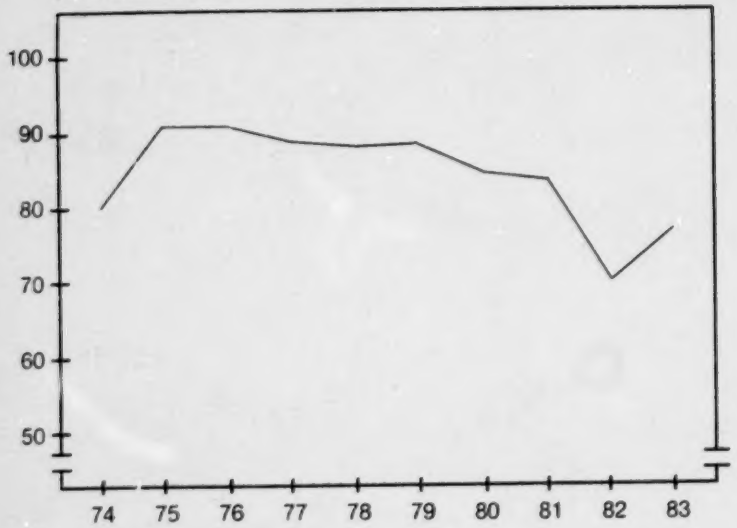


Figure 1-6
SINGLE VEHICLE COLLISIONS
(in thousands)

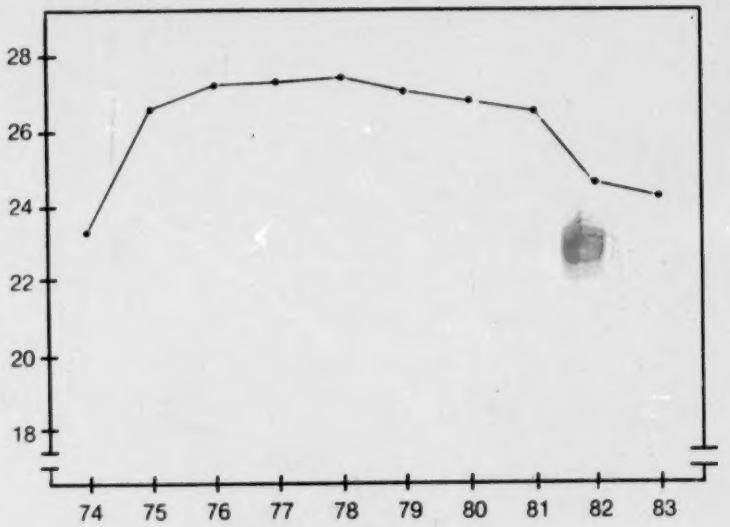


Figure 1-7
VEHICLE-PEDESTRIAN COLLISIONS
(in hundreds)

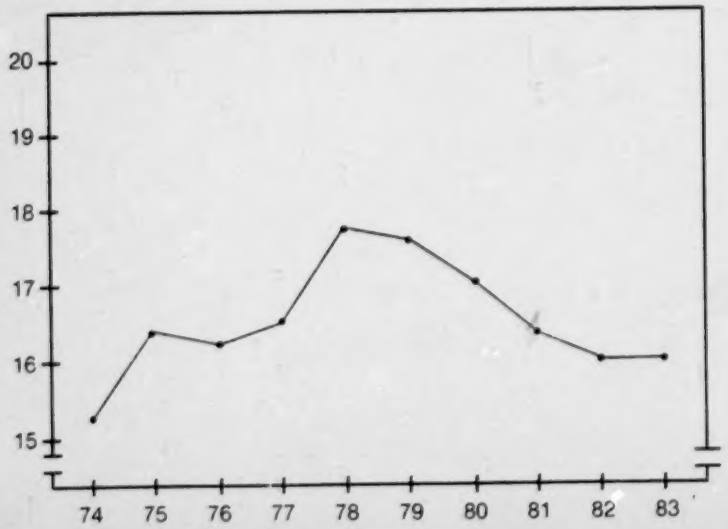
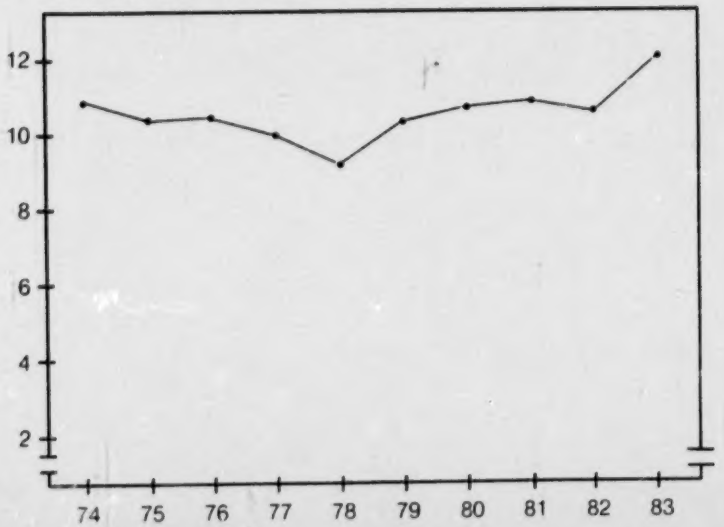
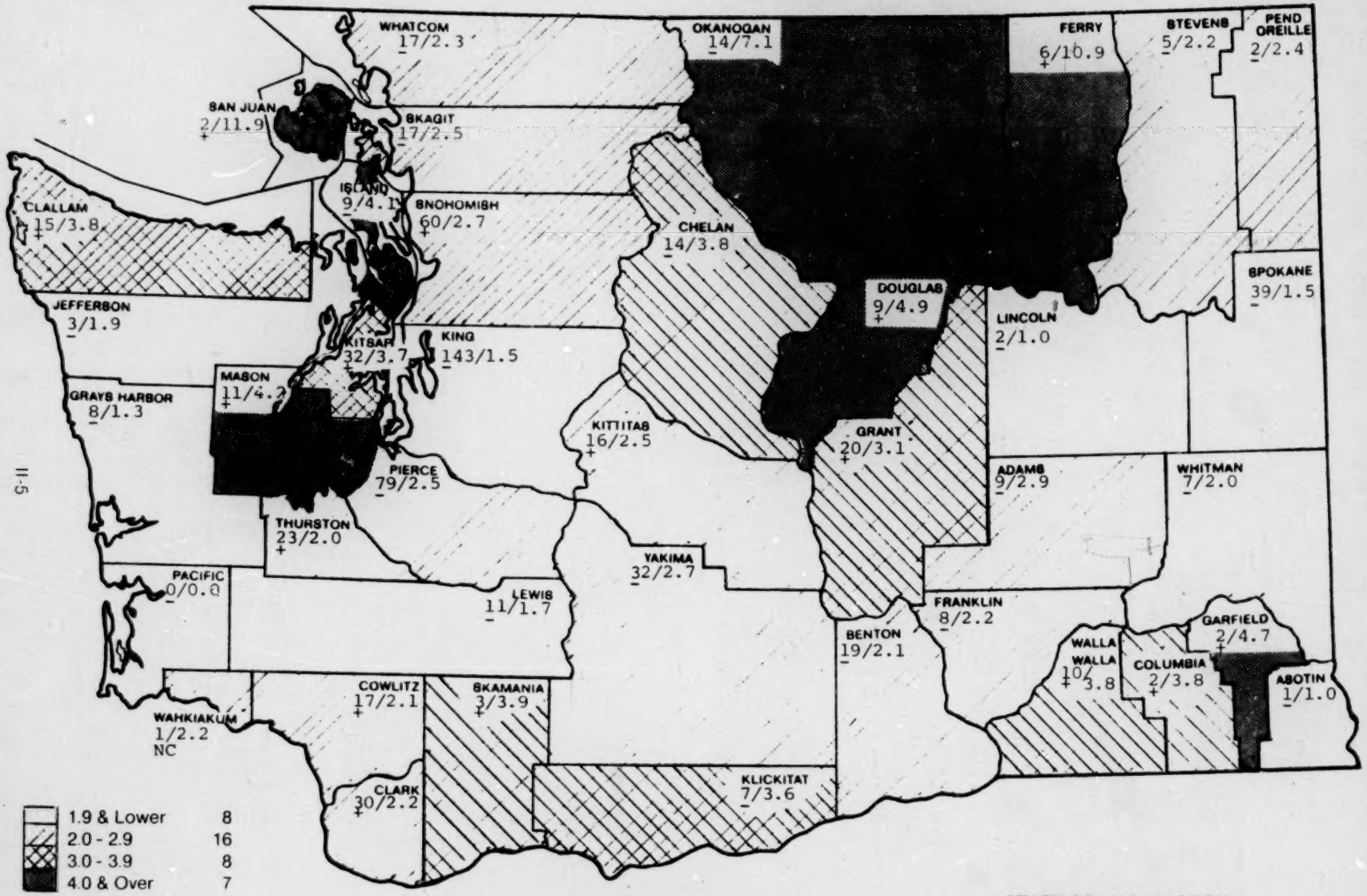


Figure 1-8
VEHICLE-PEDALCYCLIST COLLISIONS
(in hundreds)





II-5

Traffic Deaths/Death Rate
705/2.2
- = **Less Than 1982**
+ = **More Than 1982**

STATE OF WASHINGTON
TRAFFIC DEATHS & DEATH RATE
By County — 1983
Statewide Death Rate 2.2

Table 1-5 **HIGHWAYS, TRAVEL AND FATAL ACCIDENTS — 1983**

Type of Highways	Miles of Highway	Percent of Total Highways	Veh. Miles Traveled (Millions)	Percent of Total Veh. Mi. Traveled	Total Collisions	Number Killed	*Death Rate Per CMVM
Interstate System**	697	.82	8,053	24.95	8,267	74	0.92
U.S. Numbered Routes	1,592	1.88	2,747	8.51	3,890	51	1.86
State Numbered Routes	4,653	5.49	7,339	22.74	16,827	197	2.68
County Roads	41,351	48.79	6,368	19.73	24,168	254	3.99
City Streets	10,110	11.93	7,697	23.85	52,684	116	1.51
All Other Traffic Ways	26,349	31.09	71	.22	761	13	—
TOTAL	84,752	100.00	32,275	100.00	106,597	705	2.18

*Fatalities per hundred million vehicle miles, based on roadway travel as reported by the Department of Transportation.
**Does not include traveled way.

Figure 1-10

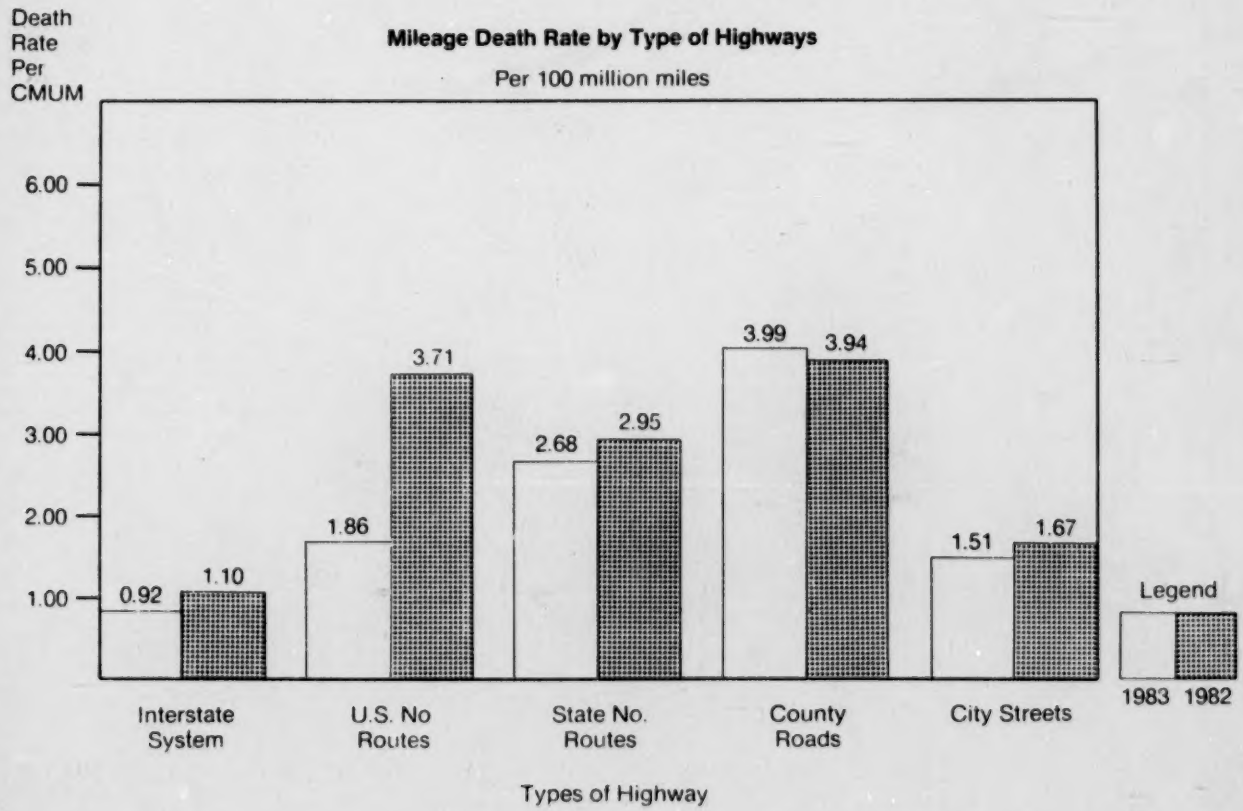


Figure 1-11

Traffic Fatalities
In 1983 and
Percent Change from 1982

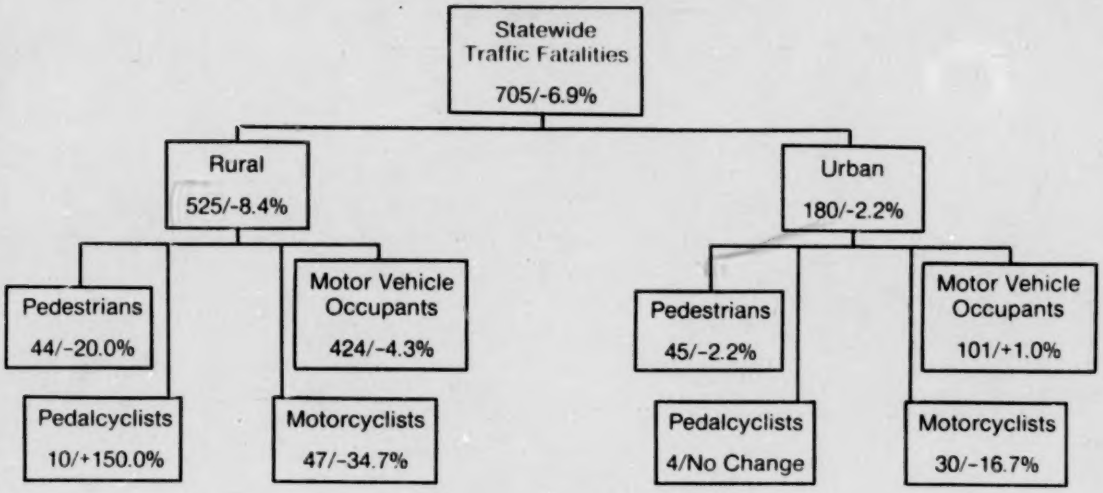


Figure 1-12

Traffic Fatalities by Age and Sex

1983

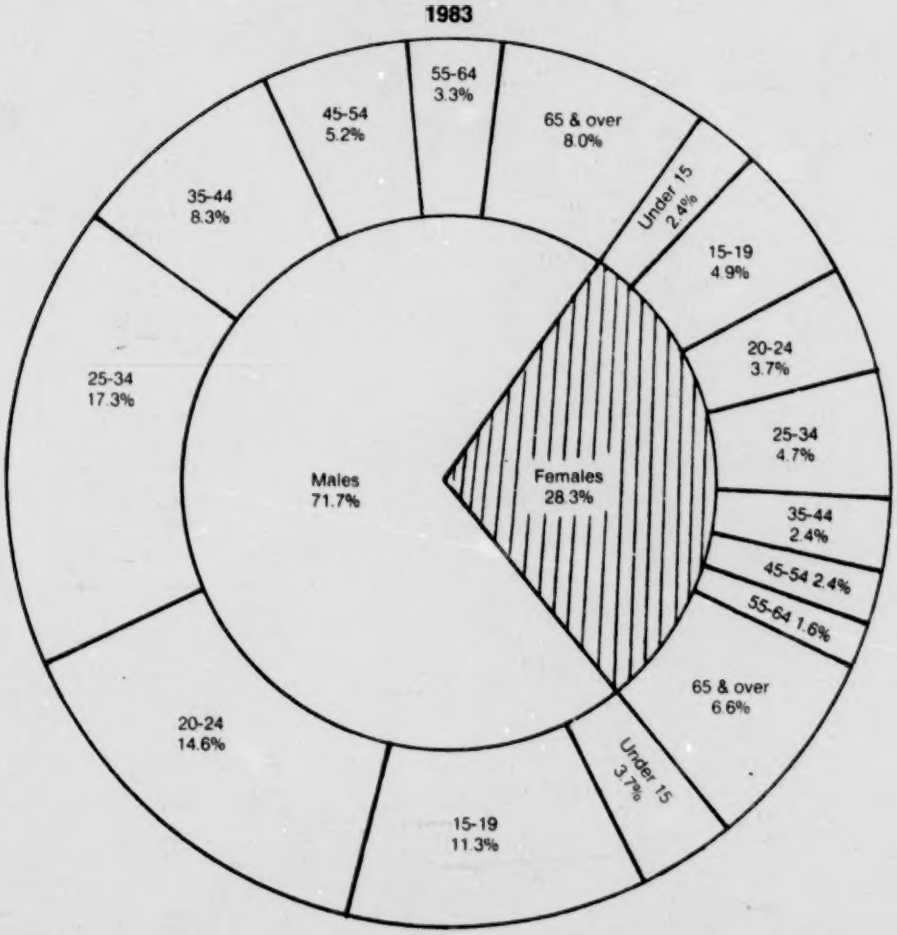


Table 1-6

Traffic Collision Problem Area by County Priority
1983

Rank	Total Collision	Drinking Driver Collisions	Collisions Involving Youthful Drivers
	King	Pierce	Pierce
2	Pierce	Snohomish	King
3	Snohomish	Kitsap	Snohomish
4	Kitsap	Yakima	Kitsap
5	Yakima	Okanogan	Yakima
6	Spokane	King	Clark
7	Clark	Grays Harbor	Spokane
8	Whatcom	Whatcom	Whatcom
9	Chelan	San Juan	Walla Walla
10	Walla Walla	Mason	Thurston
11	Benton	Walla Walla	Benton
12	Thurston	Chelan	Chelan
13	Okanogan	Island	Cowlitz
14	Grays Harbor	Clark	Grays Harbor
15	Island	Spokane	Island
16	Clallam	Benton	Skagit
17	Skamania	Skagit	Okanogan
18	San Juan	Thurston	San Juan
19	Cowlitz	Stevens	Franklin
20	Franklin	Ferry	Lewis
21	Skagit	Clallam	Clallam
22	Lewis	Asotin	Mason
23	Mason	Lewis	Whitman
24	Asotin	Pacific	Asotin
25	Douglas	Cowlitz	Douglas
26	Ferry	Franklin	Grant
27	Pacific	Pend Oreille	Stevens
28	Stevens	Skamania	Pacific
29	Jefferson	Grant	Kittitas
30	Grant	Douglas	Columbia
31	Whitman	Whitman	Pend Oreille
32	Kittitas	Kittitas	Klickitat
33	Klickitat	Klickitat	Skamania
34	Pend Oreille	Jefferson	Adams
35	Columbia	Wahkiakum	Wahkiakum
36	Adams	Garfield	Jefferson
37	Garfield	Columbia	Ferry
38	Lincoln	Adams	Garfield
39	Wahkiakum	Lincoln	Lincoln

FOOTNOTE: The counties are ranked from 1 to 39 for total countywide experience for: collisions on all roadways; drinking driver collisions and youthful driver collisions. Total collisions, miles of roadway and travel were considered for each county in the ranking. Number 1 indicates the worst problem and 39 the least.

Table 1-7

Collision Rates By County Population — 1983

County	1983 Population	Traffic Deaths	Death Rate*	No. of Injuries	Injury Rate**	Total Collisions	Collision Rate**
Over 1,000,000 Population							
1. King	1,315,800	143	10.87	19,863	15.10	38,533	29.28
250,000 to 500,000 Population							
1. Pierce	507,000	79	15.58	7,610	15.01	13,335	26.30
2. Snohomish	360,000	60	16.67	4,626	12.85	8,100	22.50
3. Spokane	348,000	39	11.21	4,938	14.19	8,031	23.08
100,000 to 250,000 Population							
1. Clark	200,000	30	15.00	2,430	12.15	4,135	20.68
2. Yakima	177,000	32	18.08	1,980	11.19	4,057	22.92
3. Kitsap	161,600	32	19.80	1,835	11.36	3,394	21.00
4. Thurston	133,500	23	17.23	1,707	12.79	3,124	23.40
5. Whatcom	112,100	17	15.17	1,445	12.89	2,366	21.11
6. Benton	108,700	19	17.48	1,265	11.64	2,482	22.83
50,000 to 100,000 Population							
1. Cowlitz	79,300	17	21.44	1,040	13.11	1,890	23.83
2. Skagit	66,100	17	25.72	1,022	15.46	1,669	25.25
3. Grays Harbor	65,800	8	12 16	831	12.63	1,615	24.54
4. Lewis	56,000	11	19.64	805	14.38	1,377	24.59
5. Clallam	52,200	15	28.74	520	9.96	1,074	20.57
25,000 to 50,000 Population							
1. Grant	49,100	20	40.73	550	11.20	964	19.63
2. Walla Walla	48,200	10	20.75	569	11.80	942	19.54
3. Island	47,000	9	19.15	416	8.85	696	14.81
4. Chelan	46,500	14	30.11	583	12.54	1,247	26.82
5. Whitman	38,900	7	17.99	376	9.67	641	16.48
6. Franklin	36,000	8	22.22	410	11.39	923	25.64
7. Mason	33,600	11	32.74	438	13.04	692	20.60
8. Okanogan	31,500	14	44.44	356	11.30	710	22.54
9. Stevens	29,700	5	16.84	324	10.91	503	16.94
10,000 to 25,000 Population							
1. Kittitas	24,900	16	64.26	473	19.00	922	37.03
2. Douglas	22,400	9	40.18	249	11.12	439	19.60
3. Pacific	17,600	0	—	225	12.78	402	22.84
4. Asotin	16,800	1	5.95	116	6.90	271	16.13
5. Jefferson	16,800	3	17.86	194	11.55	362	21.55
6. Klickitat	16,300	7	42.94	170	10.43	313	19.20
7. Adams	13,600	9	66.18	223	16.40	319	23.46
Under 10,000 Population							
1. Lincoln	9,600	0	—	128	13.33	169	17.60
2. Pend Oreille	8,900	2	22.47	118	13.26	163	18.31
3. San Juan	8,700	2	22.99	73	8.39	122	14.02
4. Skamania	7,800	3	38.46	127	16.28	202	25.90
5. Ferry	6,100	6	98.36	102	16.72	152	24.92
6. Columbia	4,000	2	50.00	76	19.00	109	27.25
7. Wahkiakum	3,700	1	27.03	44	11.89	77	20.81
8. Garfield	2,400	2	83.33	60	25.00	75	31.25
Total	4,285,100	705	16.45	58,317	13.61	106,597	24.88

*Frequency per 100,000 Population
**Frequency per 1,000 Population

Collision Rate By City Population — 1983
Cities 10,000 Population and Greater

(Does not include collisions on state limited access roads or freeways)

City	1983 Population	Traffic Deaths	Death Rate*	No. of Injuries	Injury Rate**	Total Collisions	Collision Rate**
250,000 and over Population							
1. Seattle	489,700	46	9.4	8,128	16.60	17,091	34.90
100,000 to 250,000 Population							
1. Spokane	170,200	9	5.3	2,924	17.18	5,095	29.94
2. Tacoma	158,400	16	10.1	2,956	18.66	5,725	36.14
50,000 to 100,000 Population							
1. Bellevue	73,900	2	2.7	1,027	13.90	2,059	27.86
2. Everett	56,200	1	1.8	762	13.56	1,956	34.80
25,000 to 50,000 Population							
1. Yakima	48,500	3	6.2	758	15.63	1,819	37.51
2. Bellingham	45,900	0	—	531	11.57	1,092	23.79
3. Vancouver	42,600	6	14.1	693	16.27	1,388	32.58
4. Kennewick	35,700	3	8.4	353	9.89	904	25.32
5. Bremerton	35,475	7	19.7	536	15.11	1,225	34.53
6. Renton	32,700	4	12.2	983	30.06	1,248	38.17
7. Richland	32,000	5	15.6	383	11.97	734	22.94
8. Longview	30,100	4	13.3	454	14.95	847	28.14
9. Auburn	29,000	4	13.8	339	11.69	703	24.24
10. Olympia	28,000	5	17.9	460	16.43	1,008	36.00
11. Edmonds	27,000	1	3.7	218	8.07	483	17.89
12. Redmond	26,300	0	—	274	10.42	491	18.67
13. Walla Walla	25,600	2	7.8	264	10.31	520	20.31
14. Kent	25,500	2	7.8	665	26.08	1,141	44.71
15,000 to 25,000 Population							
1. Lynnwood	23,000	0	—	483	21.00	898	39.04
2. Pullman	23,000	0	—	118	5.13	241	10.48
3. Mercer Island	21,150	0	—	82	3.88	219	10.35
4. Pasco	19,050	3	15.7	237	12.44	610	32.02
5. Kirkland	18,850	3	15.9	195	10.34	483	25.62
6. Puyallup	18,550	1	5.4	225	12.13	509	27.44
7. Aberdeen	18,050	4	22.2	200	11.08	562	31.14
8. Wenatchee	17,150	1	5.8	214	12.48	590	34.40
9 Port Angeles	17,100	0	—	165	9.65	458	26.78
10. Montlake Terrace	16,000	0	—	111	6.94	280	17.50
10,000 to 15,000 Population							
1. Lacey	14,300	0	—	146	10.21	324	22.66
2. Mount Vernon	13,600	1	7.4	210	15.44	403	29.63
3. Oak Harbor	12,150	0	—	71	5.84	144	11.85
4. Centralia	11,700	2	17.1	178	15.21	343	29.32
5. Ellensburg	11,550	0	—	58	5.02	209	18.10
6. Kelso	11,000	1	9.1	149	13.55	351	31.91
7. Moses Lake	10,300	0	—	95	9.22	248	24.08
8. DesMoines	10,250	2	19.5	143	13.95	204	19.90
Statewide urban (Less Urban freeways)	2,141,838	151	7.1	27,488	12.83	56,976	26.60

*Frequency per 100,000 population
**Frequency per 1,000 population

EXPLANATION OF PROBLEM

ANALYSIS PROCESS

Explanation of Problem Analysis Process

In developing the Problem Identification section for the 1985 Highway Safety Plan (HSP), problem areas were classified into two basic types: impact problems and system support problems.

Impact problems are those whose factors contribute directly to the occurrence of accidents, fatalities and/or injuries and may be corrected through the implementation of countermeasures designed to reduce the effects of these factors.

System support problems are those deficiencies within vital traffic safety programs whose correction may not be directly reflected in a reduction in traffic accidents, injuries or fatalities.

The basis for impact and system support problem identification, analysis and selection for inclusion to the HSP was done in two ways.

1. Impact problem areas were based on identifying statewide experience in impact areas (where information was available) outlined in the Federal safety standards. Various statewide automated and manual traffic information systems were inventoried and analyzed. The data sources included: Traffic Accident Records, Fatal Accident Reporting System, Driver's Licensing Records, Vehicle Registration Records and Highway/Roadway Information. In most instances, four years worth of data were gathered as a baseline to serve as a point of comparison to the current year's activity level.

2. The second source for problem identification inclusion to the HSP resulted from analysis by and for various state and local agencies with an interest in highway safety. The Washington Traffic Safety Commission made it known that the two main emphasis areas in FY 1985 were the non-use of occupant restraint systems, and alcohol-related crashes.

Data Analysis and Statistical Techniques

Data analysis was a key factor in the identification and selection of the traffic problem areas included in this Plan. The analyses were performed to ensure that the conclusions drawn from the data were valid and credible.

The most common data sources in the HSP were the statewide traffic accident records, which were used for identifying the specific traffic problem areas. Four continuous years (1979-1982) of crash experience were used to serve as a baseline in analyzing traffic accident data. This baseline was used to obtain a better perspective to assess the current year's (1983) experience with traffic problem areas. The baseline also serves to negate short-term changes in crash patterns.

The development of over/under-representation ratios were the most frequently used methods of analysis. Where relevant exposure data were available, the generation of over-representation ratios allow for the comparisons of different subgroups relative to the percentage of the population they comprise. Additionally, county and city rankings were generated for different problem areas to compare geographical and political subdivisions.

National Priority Program areas in which no Federal 402 funds are programmed during FY 1985:

Traffic Records

With the advent of the personal computer (mini or microcomputer) several local engineering and police departments in Washington State are generating local traffic enforcement data. It is hoped, however, that the collision reports will continue to be forwarded and processed in a uniform manner at the Accident Records Section of the Washington State Patrol. The manner in which collisions are reported requires that a single repository of collision reports be maintained in order to match and prepare a single file from all investigated and individual driver's reports. The single repository also eliminates a duplication of effort of the various departments. Accident data is available on tape which can be downloaded into floppy disks for local processing.

Efforts are underway to study the possibilities of a consolidated accident records unit at the state level. Several independent departmental studies have been carried out this past year with a goal of reducing redundancies and duplication. Motivation for this action is varied. One of the foremost reasons is to streamline the system in order to generate data at a faster turn around time. The other is to cut the cost of processing the data by the elimination of duplication of effort thus cutting the number of positions at the various state agencies.

While the conclusions and recommendations of the "Accident Data Improvement Plan" (ADIP) was not critical of Washington's Traffic Record System, it did encourage the state to systematize its records system to the extent that various agencies would have the ability to access each other's traffic data. This will continue to be a goal of the state's traffic records community. The ultimate goal will enable state and local jurisdictions to access the state's data from which collision, roadway, and licensing data would be available on a cost payment basis.

Emergency Medical Services

During the last decade, considerable improvements have been made in emergency medical services. In addition to herculean efforts by a host of dedicated individuals several events have taken place that have assisted in bringing emergency medical services to its current level. A brief review of those events is as follows:

A. The National Highway Safety Act of 1966 authorized the Department of Transportation to provide funds for ambulances, communications, training programs, and statewide planning. The state of Washington was a major recipient of Highway Traffic Safety funds which led to substantial improvement in basic life support systems, specifically training and communications.

B. In 1971 the Washington State Legislature included paramedic certification as part of RCW 18.71. The Local Health Officer or the University of Washington were empowered to certify paramedic personnel. In 1973, the Legislature developed new legislation on emergency medical services that sought to establish a minimum baseline for patient care. The legislation was RCW 18.73, providing for the inspection and licensing of pre-hospital emergency medical services. In 1978, RCW 18.71 was revised to include the Department of Social and Health Services and the University of Washington as the certifying agencies of paramedic personnel. It also established varying levels of advanced life support personnel (I.V. Technicians, Airway Technicians, and Paramedics) with specific educational requirements for each category. In 1979, RCW 18.73 was revised to include regional emergency medical services councils as a key ingredient in the state planning process. In addition, the revision attempted a more comprehensive and refined presentation of the requirements for emergency medical services systems development and funding. In 1983 the Legislature again took action to revise and update EMS legislation. This time they included the provision for First Responders, Medical Program Directors and local EMS councils. To some degree these features existed but without specific definition and consistency. Furthermore, physicians who become Medical Program Directors are now able to seek and obtain legal counsel from the state Attorney General while functioning as an agent for the state on administrative EMS matters.

C. In November of 1973, Public Law 93-154, otherwise known as the Emergency Medical Services Act of 1973, was signed into law. Initially, $170 million was authorized over three years. Congress later extended the legislation through 1979, authorizing $200 million for systems development, $15 million for research, $30 million for training and $22.5 million for burn injuries. The state of Washington received in excess of $4 million from 1974 to 1979 in HEW funding. The funds were directed toward the establishment of a statewide emergency medical services system.

D. The 1979 federal funding of emergency medical services systems terminated. The state of Washington enacted Substitute Senate Bill 2305, which later became Amended RCW 18.73, provides the state program with funding and guidelines to continue emergency medical services systems development and improvement.

In summary, the law provides that the Department of Social and Health Services will perform the following:

A. Systems development and coordination, provided by state regional coordinators.

   1. Prescribe minimum requirements for:
      a. ambulances
      b. aid vehicles
      c. communications equipment
      d. personnel engaged in prehospital emergency medical services, specifically, advanced life support and basic life support training.
   2. Establish standards for the operation of emergency medical services systems.
   3. Develop procedures for evaluating system effectiveness.
   4. Coordination of medical air evacuation.
   5. Conduct regional planning of emergency medical services systems, initiated at the local or county level.

B. Distributing approximately $2.5 million in state funds for:

   1. Establishment and initial operation of the emergency medical services program.
   2. Expansion and improvement of emergency medical services programs.
   3. Purchasing vehicles and equipment in support of the initial operation, expansion or improvement.
   4. Training and continuing education.

The future of emergency medical services in Washington State can best be described in specific objectives:

A. Implementation of statewide patient treatment, triage, and transfer protocols.

B. Eighty percent of the state's population covered by a single access (9-1-1) and central dispatch system.

C. Standardized medical reporting system that ensures commonality in data reporting and systems analysis.

D. Expansion and improvement of basic life support and advanced life support training as necessary to accommodate the needs of the public throughout the state.

E. Public information and education programs that reach one out of every four persons in the state with emphasis on the secondary school system.

F. Periodic evaluation of minimum criteria for pre-hospital transport systems.

G. Strengthening medical control of all basic and advanced life support systems.

H. Biennial re-evaluation of hospital facilities in relation to their patient care profile.

I. Assisting in the improvement of local systems management and development by supporting local funding and suitable legislation.

J. Annual evaluation of the emergency medical services system with emphasis on the implementation of selected tracer studies.

Police Traffic Services

The federally mandated "55 MPH" enforcement program will continue to be funded during the 1984 fiscal year. There will be no additional enforcement programs funded with traffic safety funds during the coming year. One of the Commission's emphasis programs in FY 1985 will be directed toward the Community DWI Task Forces. It is hoped that selective traffic enforcement program directed at the drunk drivers will be emphasized in these communities. Seattle's DWI Sobriety Checkpoint Program is a case in point. The locations for the checkpoints are determined from traffic records indicating areas where alcohol-related crashes are occurring.

Many of the enforcement programs initiated with Washington Traffic Safety Commission funds are being continued by local and state funding.

Courts Management Improvements

A. Judicial Information System - The Supreme Court set the state's Judicial Information System in motion in 1973 with the establishment of a special committee to study potential uses of automation within the judicial branch of government. System development began at the superior court level in 1976 with grants from the Law Enforcement Assistance Administration (LEAA) and the Traffic Safety Commission. The same year, Supreme Court Rules (JISCR) formally established the JIS Committee and the controlling policy environment. Additional LEAA grants helped initiate computer systems for the Supreme Court and Court of Appeals and for juvenile courts and courts of limited jurisdiction. In 1981, following recommendation by the committee and its chairman, Justice Robert F. Brachtenbach, the Legislature allocated funds to the system via assessments on system users.

During 1983, JIS continued its steady growth as more courts and more new functions were added to the sytem. JIS now records all cases at the appellate court level, 85 percent of all superior court cases, and 97 percent of all juvenile court cases.

While 42 percent of the cases processed by courts of limited jurisdiction use some automated data processing provided by JIS, 1983 marked the initiation of the expanded DISCIS minicomputer system. Five courts, representing ten percent of the total caseload, had been converted through December.

DISCIS - Installation of the District/Municipal Court Information System began in 1983, and five courts were in operation on the new system by year's end. Presently, DISCIS offers citation and civil case filing; name indexing, case tracking, calendaring and docketing; summons and bail notices; failure-to-appear and warrant management; caseload statistics; and fiscal controls, including cashiering, trust and time-pay accounting and management reports. A continuing installation schedule is anticipated to provide DISCIS services as rapidly as possible to a large number of courts of limited jurisdiction.

B. Law-related Education - Judicial interest in law-related education, was reawaken[illegible] 1982 with the formation of the Law-related/Citizen Education Coalition. A non[illegible] volunteer organization of educators, lawyers, judges, law enforcement offic[illegible] community leaders, the group works to promote the placement of law-related [illegible] in the curricula of the state's elementary and secondary schools.

In early 1983, a statewide community relations seminar, designed primarily for j[illegible]es, gave further impetus to that activity. Sponsored by the Board of Judiciary Education and staffed by the Office of the Administrator for the Courts, the seminar featured a special segment on law-related education or "LRE." As a result of that event, several judges from one jurisdiction formed themselves into a team, added educators, lawyers and others, then began making plans for the infusion of law-related education topics into the curricula of school districts in their area.

C. Jury Management - In 1983, seven counties continued their participation in the jury management program sponsored by the Office of the Administrator for the Courts.

Courts involved in the program are implementing procedures that will minimize costs, decrease administrative time, and increase juror satisfaction while continuing to preserve the integrity and randomness of the juror selection process.

During 1983, courts in the following counties participated in the jury management program: Clark, King (Seattle Municipal Court), Kitsap, Mason, Pacific, Skagit, and Thurston.

Major elements of the program include: (1) collection of jury data for monitoring and analysis, (2) implementation of juror call-in systems, (3) design of new forms (summons/qualifications, certificates, data collection instruments, data mailers, etc.), and (4) adoption of standard panel sizes and excusal and postponement policies.

In addition, the Washington Pattern Instructions Committee, in conjunction with the Superior Court Judges' Association and the Washington State Magistrates Association, revised and edited the *Juror's Handbook to Washington Courts*. Eighty-thousand handbooks were distributed to superior, district, and municipal courts in the Fall of 1983.

D. Interagency Group Efforts - The Office of the Administrator for the Courts worked with the Department of Social and Health Services' Bureau of Alcohol and Substance Abuse to implement legislation allowing misdemeanant probation departments to perform alcohol evaluations on DWI defendants. Working through the Board for Judiciary Education, the Office of the Administrator for the Courts' staff developed a reimbursement process to pay expenses of probation officers wishing to obtain college credits to allow them to become certified alcohol counselors.

E. Statistical Reporting - Caseload reports submitted monthly by county clerks for the superior courts and by administrative personnel for courts of limited jurisdiction, provide basic statistics on filings, dispositions, proceedings, and other court activity. As fundamental indicators of workload, these statistics are used in decision-making related to allocation of resources by local and state government. They also assisted in the examination of court policies and procedures. Therefore, accuracy of caseload statistics and their comparability among courts is essential.

Considerable effort was expended in 1983 to improve the quality of information of these reports. Since most superior court monthly statistics are obtained from the Superior Court Management Information System (SCOMIS), research and statistics personnel of the Office of the Administrator for the Courts focused attention on improving codes and definitions used in that system. These efforts resulted in a revised reporting format and a manual of instructions. Work was also completed during the year to permit automated extraction of monthly statistics from SCOMIS for counties opting to enter data on pre-SCOMIS case activity into the system.

ANALYSIS OF SELECTED

TRAFFIC PROBLEMS

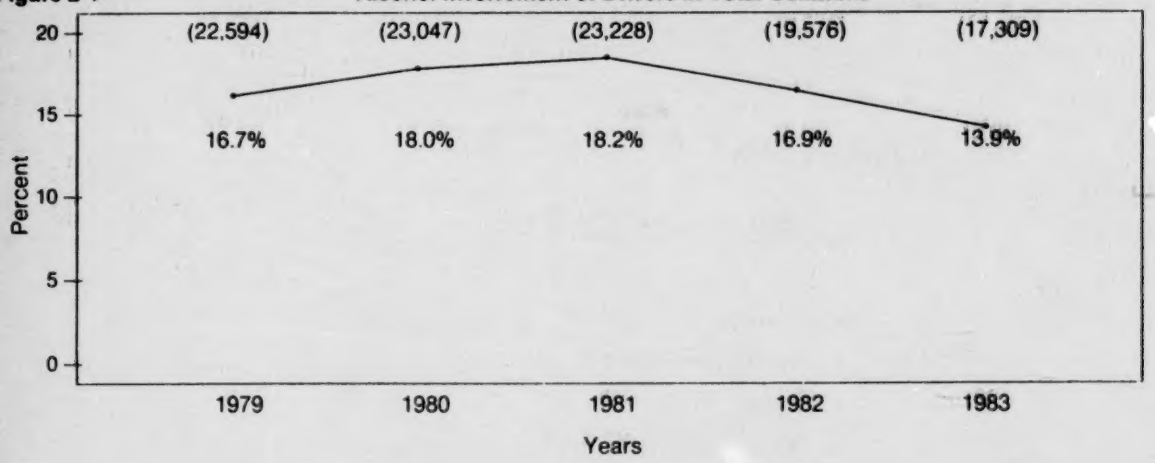
- Alcohol Involvement
- Youth Involvement
- Safety Restraint Usage
- Motorcycle Collisions
- Pedalcycles
- Pedestrians
- Heavy Trucks
- Pupil Transportation
- Contributory Driver Violations
- Vehicle Defects

ALCOHOL INVOLVEMENT

Overview

In 1983, 13.9% of all drivers involved in traffic collisions had been drinking alcohol. This is a 17.8% decrease over 1982 and continues a two-year downward trend which reverses the 1979 thru 1981 trend where the number of drivers who had been drinking had been increasing (Figure 2-1).

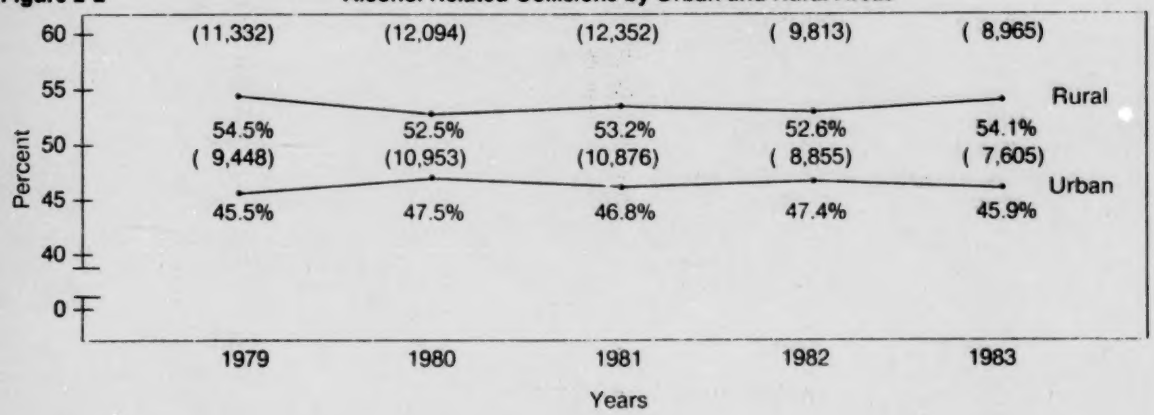
Figure 2-1 **Alcohol Involvement of Drivers in Total Collisions**



Location of Alcohol Related Collisions

In 1983 the urban-rural breakdown of alcohol involved collisions shifted slightly with an increase in rural areas and a decrease in the urban areas compared to 1982 — 45.9% of the alcohol related collisions occurred in urban areas and 54.1% occurred in rural areas (Figure 2-2).

Figure 2-2 **Alcohol Related Collisions by Urban and Rural Areas**



Multiple vehicle crashes have been the predominant type of alcohol-related mishaps in urban areas. They occurred significantly more often than single vehicle accidents (Figure 2-3). The opposite is true in rural areas. Single vehicle accidents involving alcohol were significantly more prevalent than multiple vehicle collisions (Figure 2-4). In 1983, alcohol-related accidents maintained these trends. Sixty-five point four percent (65.4%) of the urban alcohol-related collisions were of the multiple vehicle type, while on rural roads, 64.8% of the alcohol-involved collisions were single vehicle.

Figure 2-3 **Urban areas, percentage of single vs. multiple alcohol involved Vehicle Collisions**

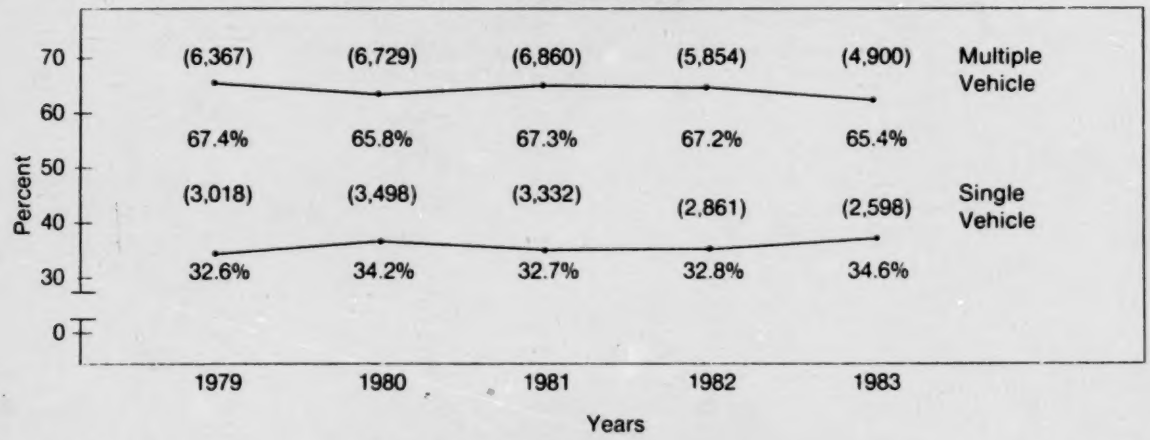
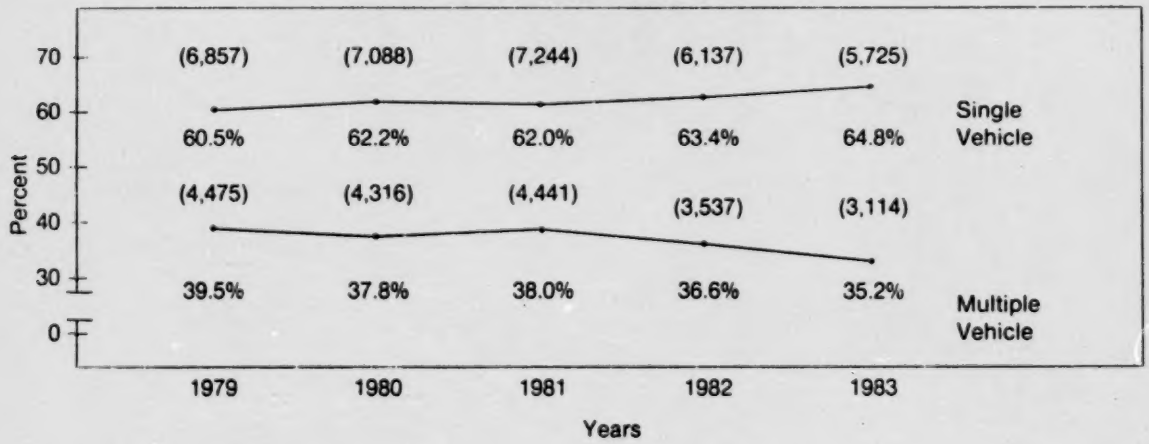


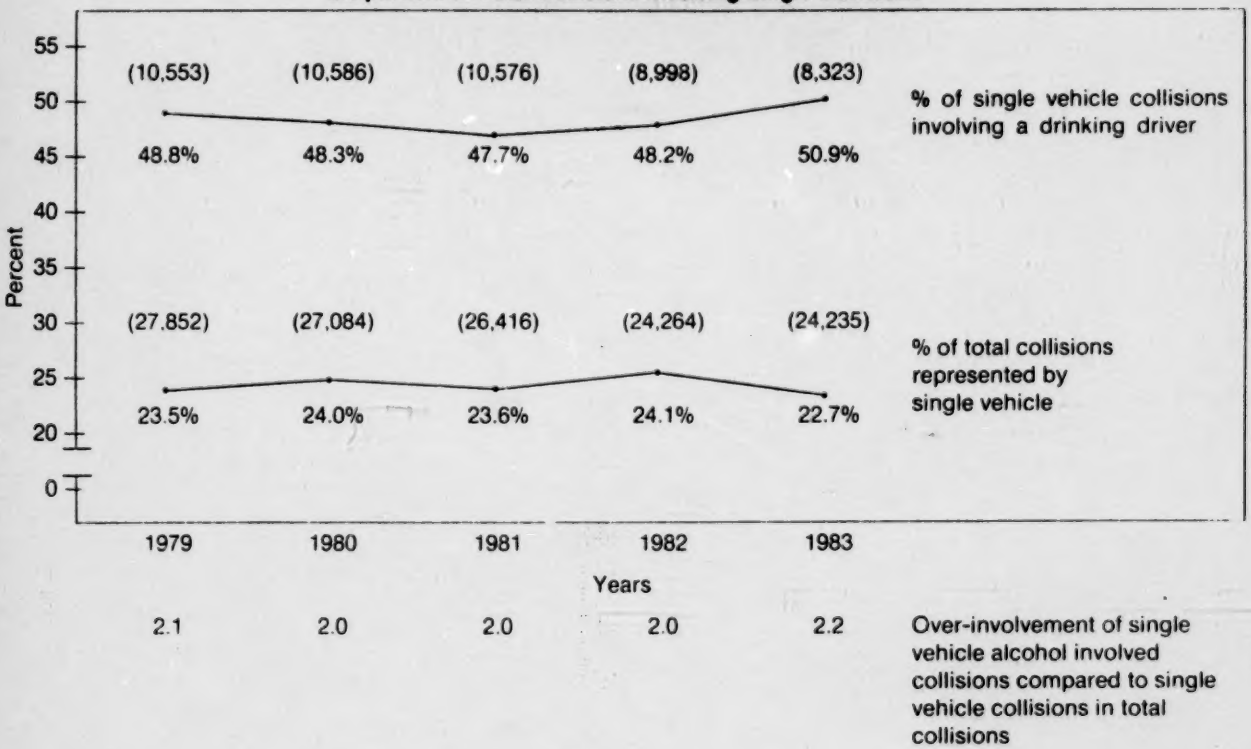
Figure 2-4 **Rural areas, percentage of single vs. multiple alcohol related Vehicle Collisions**



Single Vehicle Accidents Involving Alcohol

In 1983 the percentage of all single vehicle accidents where the driver had been drinking remained relatively stable at nearly 50% of the total single vehicle accidents. The percentage of total accidents that the single vehicle accident represents has also remained relatively constant (Figure 2-5). Comparing the percentage of alcohol involvement in single vehicle collisions to the percentage of total collisions the single vehicle collision represents, allows for the generation of a ratio to express the over-representation of alcohol in single vehicle collisions. In 1983, this ratio increased to 2.2. The highest in the five year history.

Figure 2-5 **Alcohol Involvement in Single Vehicle Collisions Compared to the percent of Total Collisions Involving Single Collisions**



Drivers Involved in Fatal Collisions

In 1983, 39.4% of the drivers involved in statewide fatal collisions had been drinking intoxicants. This was a 16.5% decrease over the four year baseline period. In the rural areas 41.0% of the drivers involved in fatal accidents had been drinking alcohol, a decrease of 14.2% over the baseline. Urban areas recorded a 35.5% alcohol involvement rate in 1983. This was a 22.0% decrease in the percentage of alcohol involvement compared to the 4 year average (Table 2-1).

Table 2-1

SOBRIETY OF DRIVERS INVOLVED IN FATAL COLLISIONS

	Drivers Involved in Fatal Collisions						
Condition of Driver (Sobriety)	**1979**	**1980**	**1981**	**1982**	**Prev. 4 Yr. Average**	**1983**	**Change 83 - 4 Yr. Avg.**
STATEWIDE							
Had been drinking - ability impaired	426	437	364	333	390	260	- 33.3%
Had been drinking - ability not impaired	77	62	74	39	63	37	- 41.3%
Had been drinking - sobriety unknown	56	69	68	51	61	31	- 49.2%
Had not been drinking	669	584	556	489	575	502	- 12.7%
Not stated	101	94	71	49	79	62	- 21.5%
Total drivers	1,329	1,246	1,133	961	1,167	892	- 23.6%
Total driver drinking	559	569	506	423	514	328	- 36.2%
Total drivers - excluding not stated	1,228	1,152	1,062	912	1,089	832	- 23.6%
No. drinking drivers per 100 involved	45.5	49.4	47.6	46.4	47.2	39.4	- 16.5%
No. of drunk drivers per 100 involved	34.7	37.9	34.3	36.5	35.8	31.3	- 12.6%
RURAL							
Had been drinking - ability impaired	318	328	291	265	301	198	- 34.2%
Had been drinking - ability not impaired	51	47	57	28	46	28	- 39.1%
Had been drinking - sobriety unknown	38	48	46	36	42	24	- 42.9%
Had not been drinking	506	419	406	362	423	360	- 14.9%
Not stated	45	44	33	21	36	32	- 11.1%
Total drivers	958	886	833	712	847	642	- 24.2%
Total driver drinking	407	423	394	329	388	250	- 35.6%
Total drivers - excluding not stated	913	842	800	691	812	610	- 24.9%
No. drinking driver per 100 involved	44.6	50.2	49.3	47.6	47.8	41.0	- 14.2%
No. of drunk drivers per 100 involved	34.8	39.0	36.4	38.4	37.1	32.5	- 12.4%
URBAN							
Had been drinking - ability impaired	108	109	73	68	90	62	- 31.1%
Had been drinking - ability not impaired	26	15	17	11	17	9	- 47.1%
Had been drinking - sobriety unknown	18	21	22	15	19	7	- 63.2%
Had not been drinking	163	165	150	127	151	142	- 6.0%
Not stated	56	50	38	28	43	30	- 30.2%
Total drivers	371	360	300	249	320	250	- 21.9%
Total driver drinking	152	145	112	94	126	78	- 38.1%
Total drivers - excluding not stated	315	310	262	221	277	220	- 20.6%
No. drinking drivers per 100 involved	48.3	46.8	42.7	42.5	45.5	35.5	- 22.0%
No. of drunk drivers per 100 involved	34.3	35.2	27.9	30.8	32.5	28.2	- 13.2%

Alcohol Involvement by Age Group

The younger driver, under 30 years of age, is over-represented in alcohol-related accidents. In 1983, the 16-20 year old drivers were involved in 18.5% of all alcohol-related accidents while comprising only 8.3% of all licensed drivers. The over-representation ratio for this age group is 2.2, indicating that the 16-20 year old drivers were involved in 2.2 times more alcohol-related collisions than the percentage of licensed drivers they represent. The 2.2 over-representation ratio was the same as the previous year (Figure 2-6). The 21-24 year old group is also involved in twice as many alcohol-related collisions as the portion of total drivers this age group represents. The over-involvement ratio of 2.4 is above the previous year (Figure 2-7). In 1983, the 25-29 year old group was involved in 1.45 times more alcohol-related crashes than the percentage of licensed drivers they represented. This group's over-involvement ratio increased from the previous year (Figure 2-8). The remaining age group, 30 years and older, was .60 times under-represented in alcohol-related crashes (Figure 2-9).

Figure 2-6 **16 - 20 Year Old Involvement in Alcohol Related Crashes as a Percentage of All Licensed Drivers Comprising the Group**

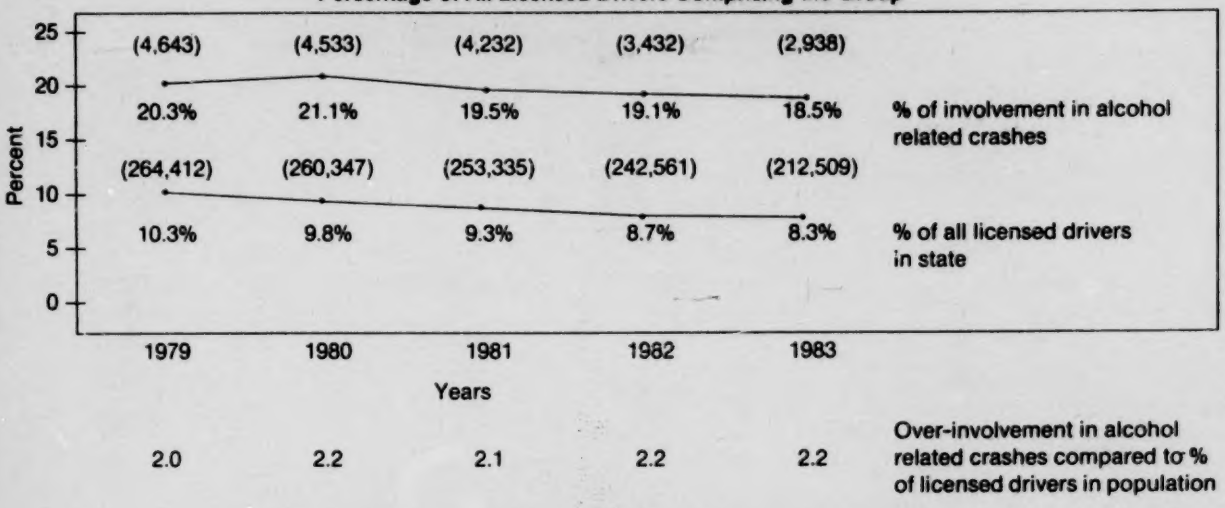


Figure 2-7 **21 - 24 Year Old Involvement in Alcohol Related Crashes as a Percentage of All Licensed Drivers Comprising the Group**

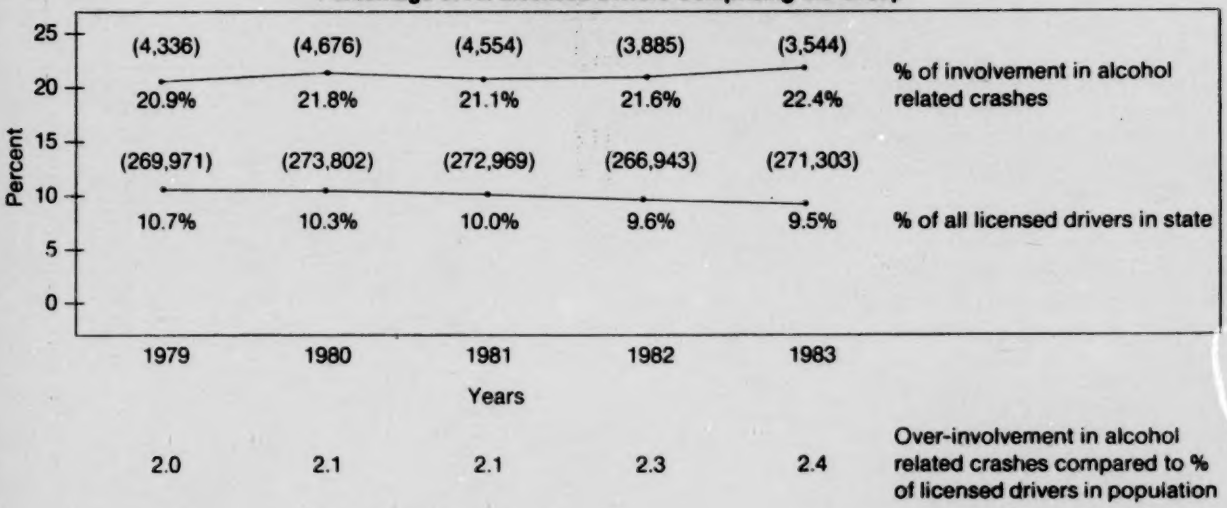


Figure 2-8 **25 - 29 Year Old Involvement in Alcohol Related Crashes as a Percentage of all Licensed Drivers Comprising the Group.**

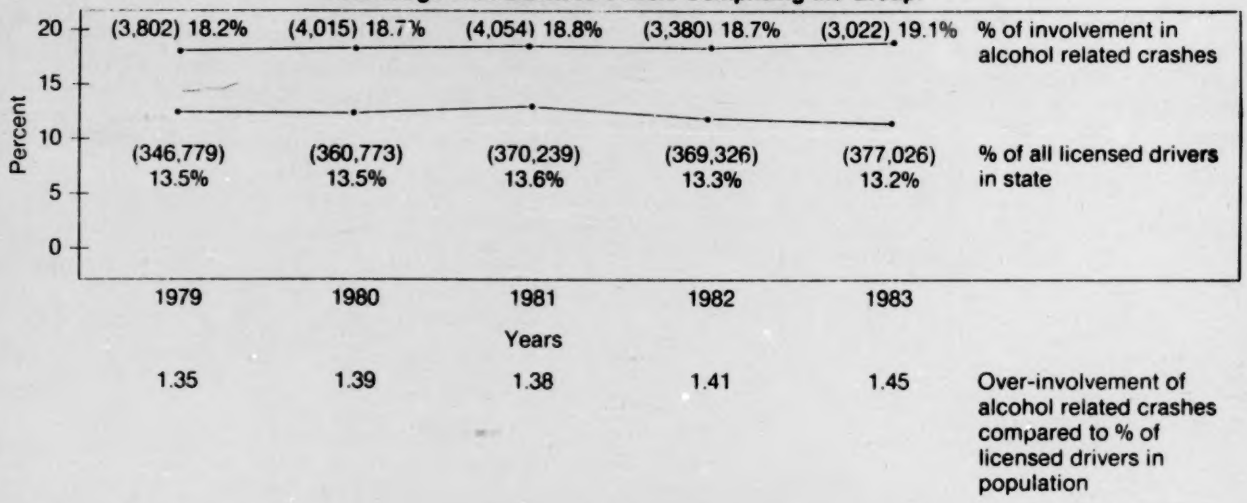
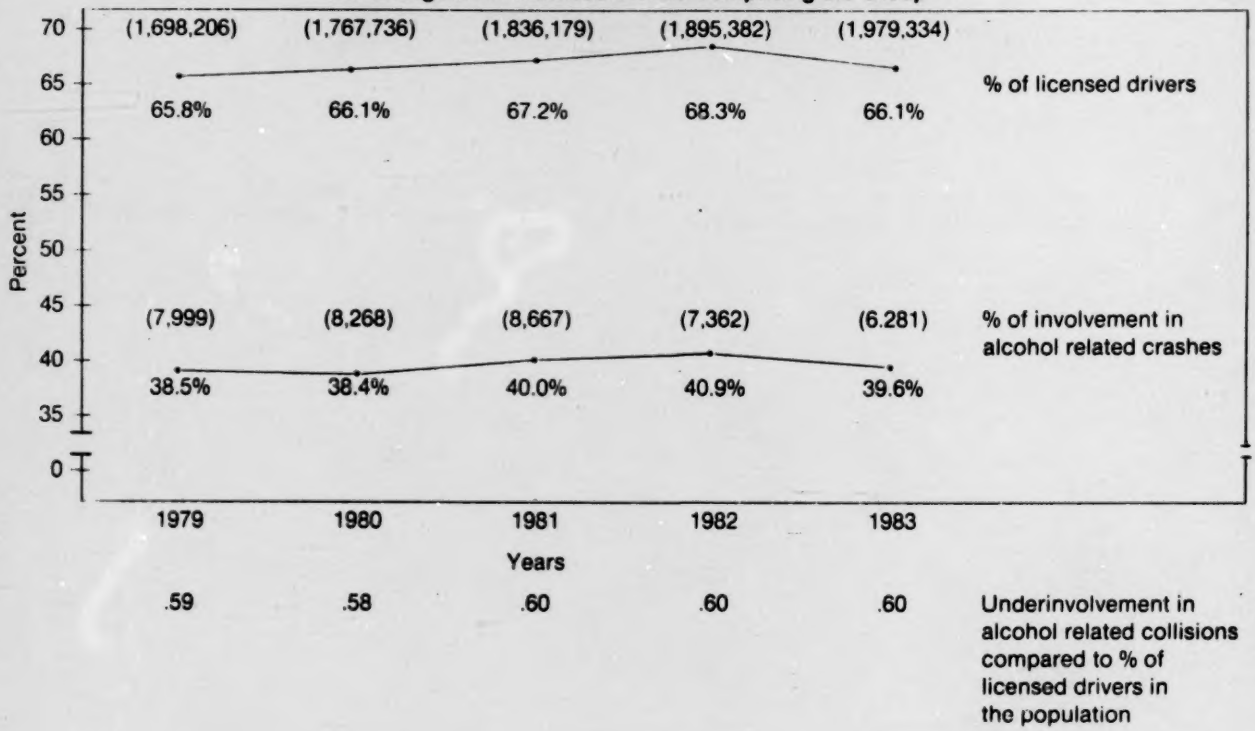


Figure 2-9 **30 Year Old and Older Involvement in Alcohol Related Crashes as a Percentage of All Licensed Drivers Comprising the Group**



Weekend Alcohol Involvement

In 1983, the percentage of alcohol related collisions occurred at a rate 1.7 times greater than all weekend collisions (Friday 6 P.M. to Sunday midnight). This over-representation ratio increased from 1982, which was the same as the previous two years (Figure 2-10). In a further breakdown of weekend alcohol related collisions comparing the percentage of alcohol involved collisions occurring Friday and Saturday between the hours of 8 P.M. to 3 A.M. (select time period) to the percentage of the total week's accidents that occur in this select time period, the alcohol related collisions are 2.8 times over-represented. This is higher than the previous two years (Figure 2-11).

Figure 2-10 **Alcohol Involvement in Weekend Collisions Compared to the Percentage of all Weekend Collisions**

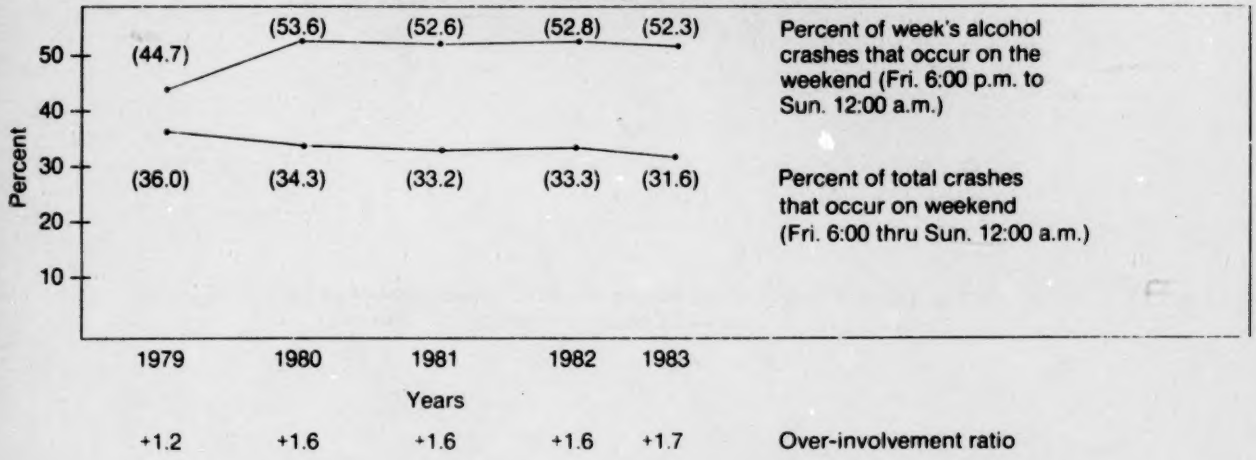
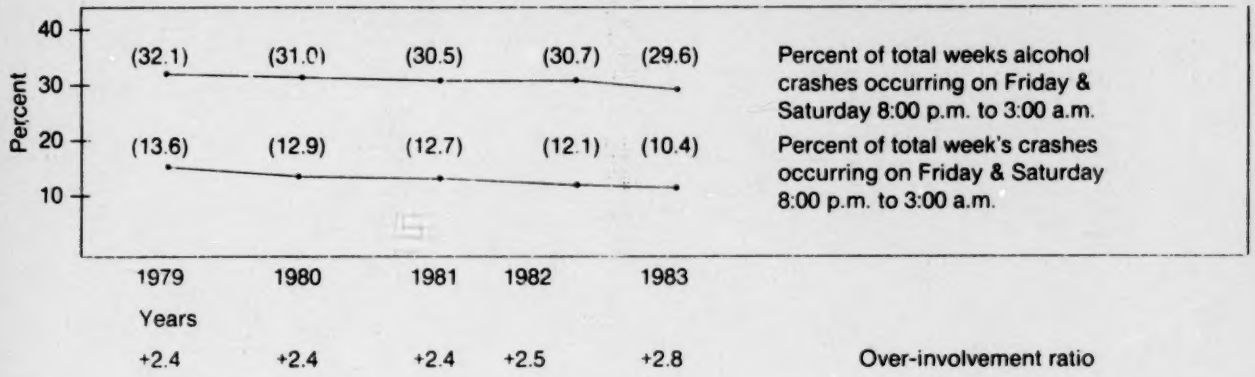


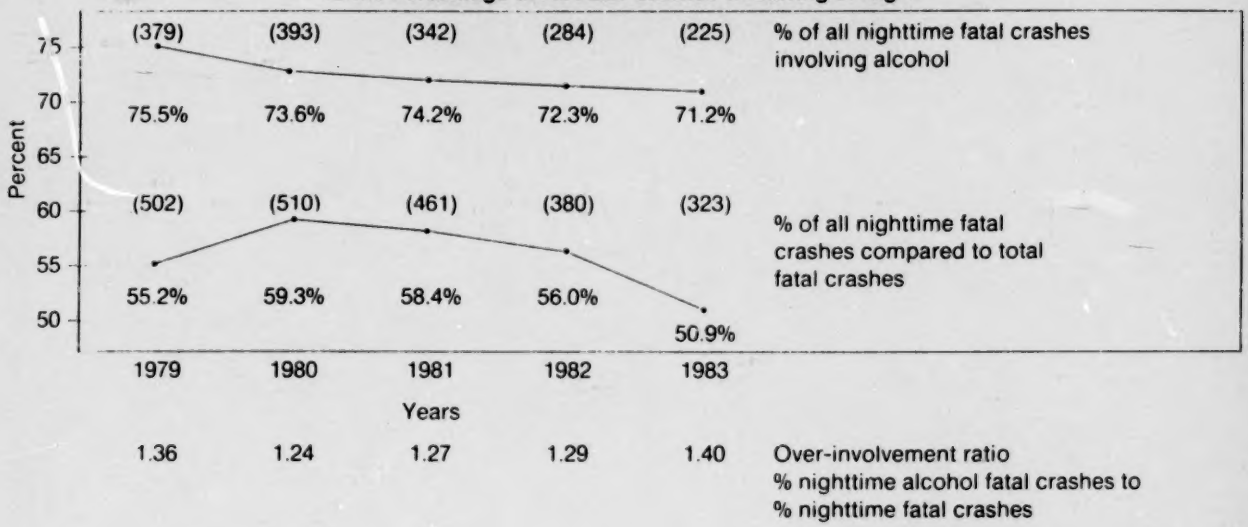
Figure 2-11 **Alcohol Involved Collisions Occurring in the Select Time Period (Friday and Saturday Between 8 P.M. to 3 A.M.) to the Percentage This Time Period Contributes to the Total Week's Collisions**



FATAL ALCOHOL INVOLVED CRASHES OCCURRING AT NIGHT

Alcohol involvement in nighttime fatal crashes has remained fairly constant over the last five years. The percentage of all nighttime fatal crashes decreased slightly in 1983. Alcohol-involved nighttime fatal crashes had an over-representation ratio of 1.40. This over-representation is up from the 1.29 for 1982 (Figure 2-12).

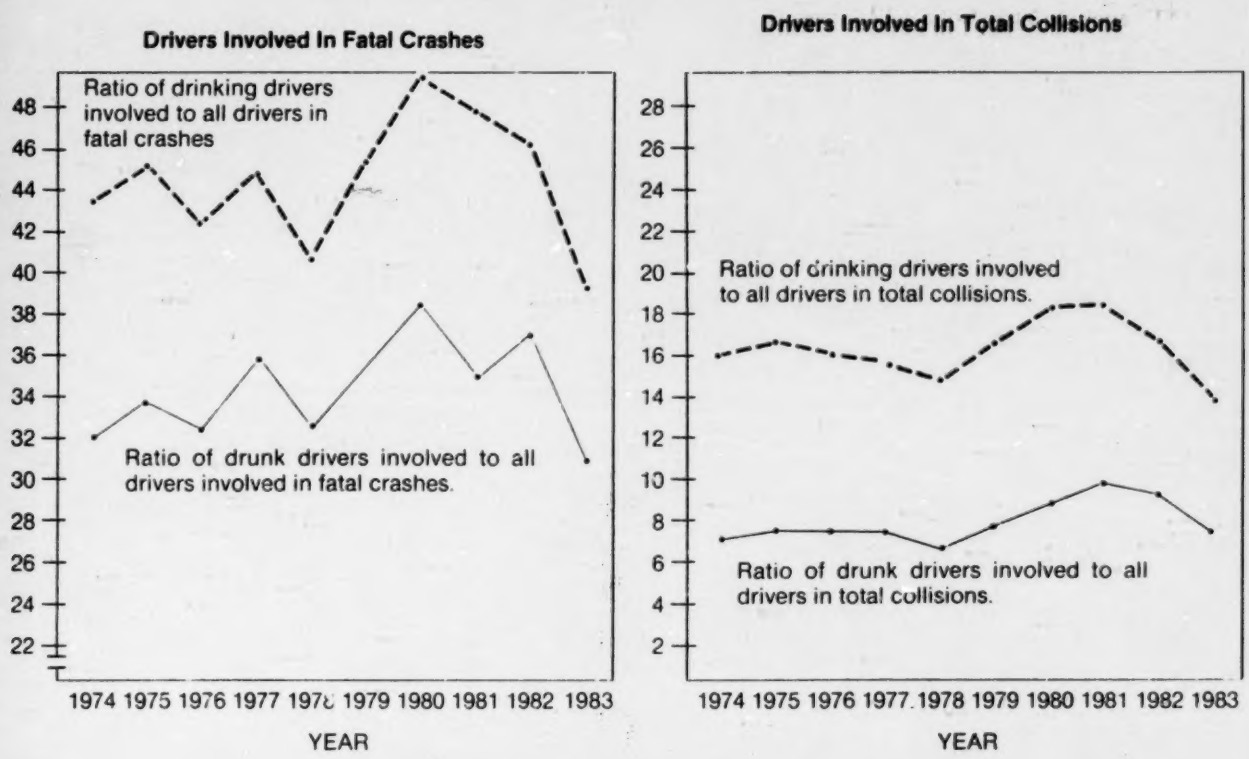
Figure 2-12 **Fatal Alcohol Involved Crashes Occurring at Night Compared to the Percentage of All Fatal Crashes Occurring at Night.**



RATIO OF DRINKING AND DRUNK DRIVERS INVOLVED IN TRAFFIC COLLISIONS

Thirty-nine percent of all drivers involved in fatal collisions had been drinking prior to the crash. This marked the third consecutive year of decline in drinking drivers following a 49.4% rate in 1980, which was a nine year high (Figure 2-12). Nearly 14% of the drivers involved in all investigated collisions had been drinking prior to the collision. The 1983 drinking driver total of 17,309 represents a 17.7% decline compared to the previous 3-year coverage (Figure 2-13).

Figure 2-12 **Ratio of Drinking and Drunk Drivers Involved In Traffic Collisions 1974 - 1983** **Figure 2-13**



The total frequency of particular blood alcohol concentration (BAC) levels in fatal and serious injury collisions between 1979 and 1983 by age groups is presented in Table 2-2. The 16-19 and 20-24 age groups had the greatest incidence of involvement for .00-.15 BAC levels. At the .16-.20 BAC range, the 20-24 age group had the greatest frequency of occurrences. Overall, the 16-19, 20-24, and 25-29 age groups display the highest incidence of involvement at all BAC levels.

Table 2-2 **Chemical Test for Intoxication in Fatal and Serious Injury Collisions for 1979, '80, '81, '82, '83**

Age	.00-.05	.06-.10	.11-.15	.16-.20	.21-.25	.26-.30	.31 & Up	Test Given No Results	Test Refused	Total Tested
16-19	204	571	1,067	732	194	34	9	156	215	3,182
20-24	123	454	1,059	954	376	67	15	174	394	3,616
25-29	99	283	857	827	407	107	28	140	450	3,198
30-34	52	183	467	604	316	92	27	80	340	2,161
35-39	31	85	293	364	200	63	16	66	242	1,360
40-44	23	58	221	280	153	44	24	37	145	985
45-49	13	38	137	228	151	45	9	26	118	765
50-54	19	38	143	195	112	51	7	21	67	653
55-59	13	38	107	147	91	26	14	16	55	507
60-64	14	30	84	120	51	20	8	12	35	374
65-69	7	18	60	52	22	5	0	13	16	193
Over 69	11	16	36	34	13	8	0	6	8	132
TOTAL	609	1,812	4,531	4,537	2,086	562	157	747	2,085	17,126

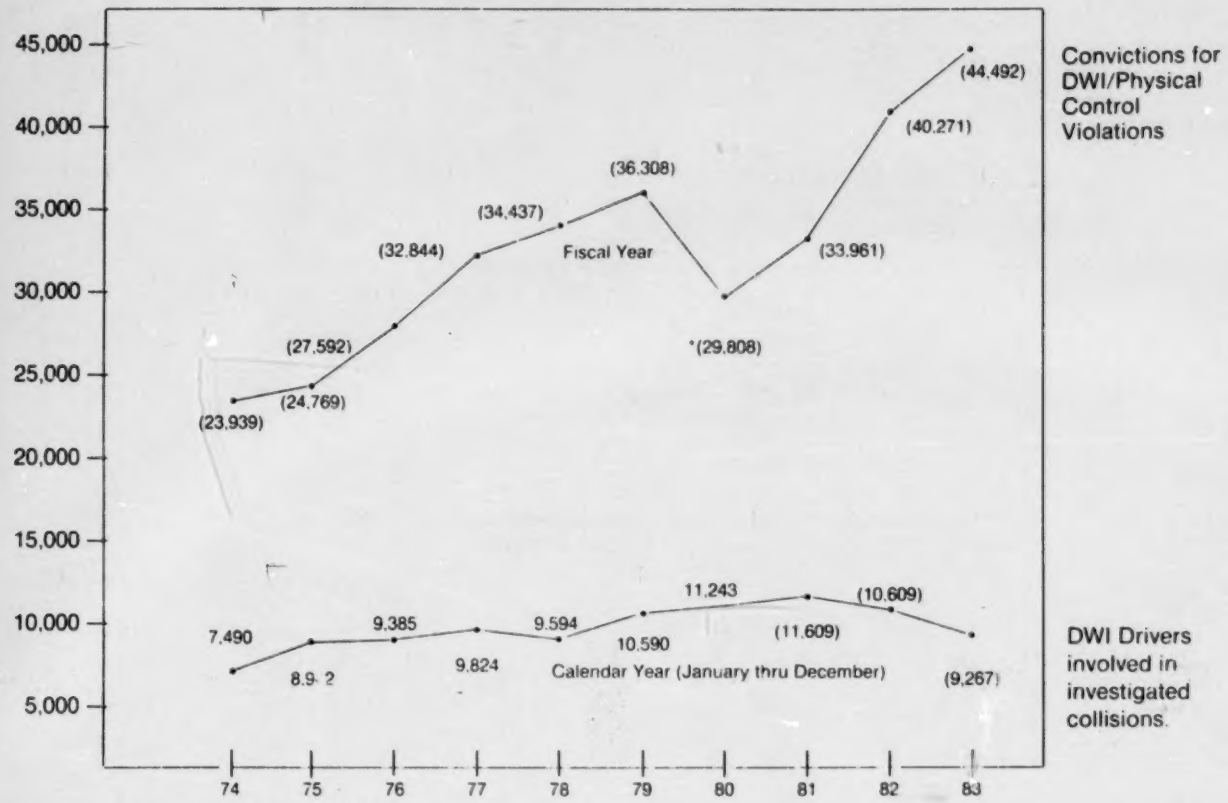
In a further breakdown of alcohol-involved fatal and serious injury accidents for 1983, an analysis of roadway type by day of week on which the accidents occurred is presented in Table 2-3. A finer distinction of the rural-urban location of alcohol-involved collisions reveals 34.5% occurred on county roads while 32.1% took place on city streets. U.S. and state routes accounted for 23.0% of the total. Interstates and full control access roads contributed the remaining 9.3% of the total alcohol-related fatal and serious injury accidents during this time period. The table also indicates that during 1983, Saturday was the day of the week with the greatest frequency of alcohol-related fatal and serious injury accidents. The other two weekend days, Sunday and Friday, have the next greatest frequencies of these accidents.

Table 2-3 **Fatal and Serious Injury Collisions Involving Alcohol — 1983 Roadway Type by Day of Week**

Roadway Type	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.	Row Total	Percentage of Total Weekly Collisions	Percentage of Previous 5 Year Average
County Roads	221	211	213	239	365	536	475	2,260	34.5%	33.1%
City Streets	194	239	216	250	311	507	392	2,109	32.1%	30.1%
U.S. & State Routes	137	126	149	183	220	415	280	1,510	23.0%	26.5%
Interstate & Full Control	51	55	75	68	110	136	116	611	9.3%	9.5%
Other Routes	6	7	6	7	12	19	15	72	1.1%	0.8%
TOTAL	609	638	659	747	1,018	1,613	1,278	6,562	100.0%	100.0%
Percent - 1983	9.2%	9.7%	10.1%	11.4%	15.5%	24.6%	19.5%	100.0%		
Percent - Previous 5 Year Average	8.8%	9.2%	9.8%	11.0%	16.4%	25.9%	18.9%	100.0%		

In 1983 the number of convictions for alcohol-related traffic offenses reached a new high of 44,492. This figure is a substantial increase over 1982 and continues an upward trend that began in 1980. In 1983 the number of DWI drivers involved in investigated collisions declined to 9,267 from the 9-year high of 11,609 recorded in 1981 (Figure 2-14).

Figure 2-14 **Comparison of Convictions for DWI/Physical Control Violations and DWI Drivers Involved In Investigated Collisions 1974 - 1983**



Convictions for physical control of vehicle while under the influence decreased from 10,520 in FY 1979 to 1,866 convictions in FY 1980. DWI convictions increased from 25,788 in FY 1979 to 27,942 in FY 1980.

In examining accident involvement by driver's age and percent of vehicle miles traveled for each age group, it will be noted that the 16-17 age group has the greatest over-representation in overall accidents at 3.33:1. The second most over-represented group in overall accidents was the 18 year olds. The age group with the greatest under-representation based on miles traveled was the 45-54 year olds. The age group with the greatest over-representation in alcohol-involved collisions based on miles traveled was 21 years old, an over-representation ratio of 2.81:1. The 18 year olds had the second highest alcohol-involved over-representation ratio at 2.23:1. The age group with the greatest under-representation for alcohol-involved accidents was 45-54 year olds (Table 2-4).

Table 2-4

Comparison of Miles Traveled
All Reported Accidents & Alcohol Involved Accidents
By Age of Driver — 1983

Driver Age	Percent of Vehicle Miles Traveled*	Percent of All Accident Drivers**	Over/Under Representation Ratio	Percent of All Alcohol Involved Accidents	Over/Under Representation Ratio
16-17	1.95	6.50	3.33:1	3.78	1.94:1
18	1.97	4.38	2.22:1	4.40	2.23:1
19	2.31	4.20	1.82:1	5.02	2.17:1
20	2.74	3.98	1.45:1	5.42	1.98:1
21	2.31	3.97	1.72:1	6.50	2.81:1
22-24	8.38	10.46	1.25:1	16.00	1.91:1
25-34	27.40	26.93	.98:1	31.91	1.16:1
35-44	19.48	16.00	.82:1	13.90	.71:1
45-54	17.53	9.03	.52:1	6.68	.38:1
55-64	10.73	7.52	.70:1	4.31	.40:1
65 & Over	5.10	6.61	1.30:1	2.13	.45:1

*Source — National Accident Sampling System (NASS) — 1979-80
**Source — Accident Records Unit — Washington State Patrol

Table 2-5 presents a summary of the number of persons killed and injured, number of property damage accidents, and total reported accidents, for drivers under the influence, all drinking drivers, and non-drinking driver collisions. It should be noted that for all categories of the alcohol-related collisions decreases are reported in 1983 from the previous two years. By comparison increases were shown in all categories of the non-drinking driver collisions.

Table 2-6 indicates the number of persons killed and injured from drivers "under the influence" and "had been drinking" by month for 1981, 1982, and 1983. The months of July, August, and September reported the higher incidents of persons killed due to drivers who were classified as "under the influence" and "had been drinking" in all three years. The months of April through July recorded the most injuries due to the intoxicated drinking driver.

Table 2-5 **Summary of Persons Killed and Injured in Alcohol Related Collisions 1981 - 1982 - 1983**

	Drivers Under the Influence				All Drivers Who Had Been Drinking (HBD) (including DUI)				Non-Drinking Driver Collisions		
	1981	1982	1983	% of Change 83-82	1981	1982	1983	% of Change 83-82	1982	1983	% of Change 83-82
Persons Killed	389	366	299	-18.3%	516	442	364	-17.6%	315	341	+ 8.3%
Person Injured	9,266	8,202	7,446	- 9.3%	17,268	14,491	12,909	-10.9%	40,298	45,408	+12.7%
Disabling Injury	2,078	1,795	1,667	- 7.1%	3,609	3,018	2,634	-12.7%	5,258	5,766	+ 9.7%
Non-Disabling Injury	4,469	4,017	3,616	- 10.0%	8,330	7,035	6,260	-11.0%	15,305	17,678	+15.5%
Possible Injury	2,719	2,390	2,163	- 9.5%	5,329	4,438	4,015	- 9.5%	20,158	21,964	+ 9.0%
Property Damage Accidents	5,224	4,713	4,114	-12.7%	10,597	8,905	7,855	-11.8%	53,270	57,834	+ 8.6%
Total Reported Accidents	11,499	10,292	9,207	-10.5%	22,173	18,669	16,570	-11.2%	81,975	90,027	+ 9.8%

Table 2-6 **Persons Killed and Injured in Alcohol Related Collisions By Month 1981 - 1982 - 1983**

	From Drivers "Under the Influence"						From Drivers Who "Had Been Drinking"					
	Persons Killed			Persons Injured			Persons Killed			Persons Injured		
Month	1981	1982	1983	1981	1982	1983	1981	1982	1983	1981	1982	1983
January	25	23	23	773	586	527	29	28	29	1,363	1,101	893
February	24	21	12	682	625	568	31	23	14	1,277	1,090	910
March	26	24	24	754	677	631	34	29	27	1,318	1,118	1,031
April	31	34	27	754	714	670	40	37	38	1,411	1,215	1,207
May	32	38	23	775	745	689	47	44	24	1,492	1,352	1,236
June	33	32	29	728	664	665	54	44	33	1,497	1,202	1,183
July	41	43	29	791	804	719	48	51	37	1,488	1,516	1,239
August	56	41	35	869	721	622	76	46	40	1,716	1,312	1,039
September	34	44	33	741	734	599	43	59	37	1,381	1,252	973
October	29	36	22	820	729	647	40	41	29	1,441	1,231	1,139
November	31	18	24	744	518	613	42	26	33	1,379	1,004	1,162
December	27	12	18	835	685	496	32	14	23	1,505	1,098	897
TOTALS	389	366	299	9,266	8,202	7,446	516	442	364	17,268	14,491	12,909

YOUTH INVOLVEMENT

Overview

In 1983, the young drivers (20 years old and younger) comprised 8.3% of all licensed drivers. This group was involved in 19.5% of the total 1983 collisions, for an accident over-representation rate 2.3 times higher than the percentage of licensed drivers comprising this group. The 21-24 year old age group was involved in 14.4% of the total collisions, while comprising 9.5% of all licensed drivers. The over-representation factor for this group was 1.5. The 25-29 year old age group was the modal group. It represented 14.8% of all accidents and 13.2% of all licensed drivers. It was over-represented by a factor of 1.23. All other age groups with the exception of the 65-69 age group, were under-represented when comparing the percentage of involvement in accidents to the percentage of licensed drivers comprising the groups (Table 3-1).

DRIVER AGE DISTRIBUTION — 1983

Table 3-1 **COMPARISON OF DRIVERS INVOLVED TO NUMBER LICENSED**

Age of Driver	Involved in Collisions Number	% of Total	Percent of Licensed Driver	Over/Under Representation Ratio
Under 16	700	0.43	—	—
16	4,513	2.79	0.93%	3.00
17-18	13,091	8.09	3.24%	2.50
19-20	13,252	8.18	4.17%	1.96
21-22	12,318	7.61	4.60%	1.65
23-24	11,036	6.82	4.86%	1.23
25-29	24,002	14.82	13.15%	1.23
30-34	19,604	12.11	12.92%	.68
35-39	15,202	9.39	11.40%	.86
40-44	10,698	6.61	8.65%	.71
45-49	7,687	4.75	6.77%	.74
50-54	6,936	4.28	6.13%	.60
55-59	6,485	4.00	6.11%	.64
60-64	5,702	3.52	5.84%	.35
65-69	4,228	2.61	4.73%	1.09
70 and over	6,482	4.00	6.50%	.98

YOUTHFUL DRIVER INVOLVEMENT IN COLLISIONS BY FIRST HARMFUL EVENT

In 1983, 72.3% of youthful driver's (24 years old and younger) involvement in total collisions involved colliding with other moving vehicles. This type of collision also resulted in the greatest percentage of fatal collisions (37.9%) and injury collisions (67.4%). Single vehicle collisions with fixed objects led to the second largest percentage of youthful driver involvement in total, fatal and injury collisions, at 17.0, 34.5 and 19.3% respectively (Table 3-2).

Table 3-2 **YOUTHFUL DRIVERS BY FIRST EVENT — 1983**

	In Total Collisions	Percent of Total	In Fatal Collisions	Percent of Total	In Injury Collisions	Percent of Total
Collision with other moving motor vehicles	34,476	72.3%	100	37.9%	12,909	67.4%
Collision with parked vehicle	1,971	4.1%	5	1.9%	513	2.7%
Collision with fixed/ other object	8,101	17.0%	91	34.5%	3,702	19.3%
Overturning and other non-collision	2,170	4.5%	37	14.0%	1,322	6.9%
Other Collision with Ped/Pedal, Animal, R.R. Train	988	2.1%	31	11.7%	714	3.7%
TOTAL	47,706	100.0%	264	100.0%	19,160	100.0%

YOUTHFUL COLLISION INVOLVEMENT BY AGE GROUP

In 1983, the 16-20 year old age group's frequency and percent of involvement in total collisions continued to diminish along with the percent of total licensed drivers this age group comprises. This group's over-representation ratio (% of total collisions ÷ % of licensed drivers) of 2.51 was up from the 2.25 ratio for the past year. It is also the highest over-representation ratio for any age group (Figure 3-1). The 21-24 year old age group maintained an over-representation ratio of 1.5 for the fifth year in a row (Figure 3-2). The 25-29 year old age group had the smallest over-representation ratio of the youthful drivers in 1983 at 1.12 down slightly from the 1.15 ratio in 1982 (Figure 3-3). The 30 year old and over age group continues to be under-represented in total collisions compared to the percentage of licensed drivers this age group comprises (Figure 3-4).

Figure 3-1 **16-20 Year Old % Of Involvement In Total Collisions Compared to % of Licensed Drivers Comprising the Age Group**

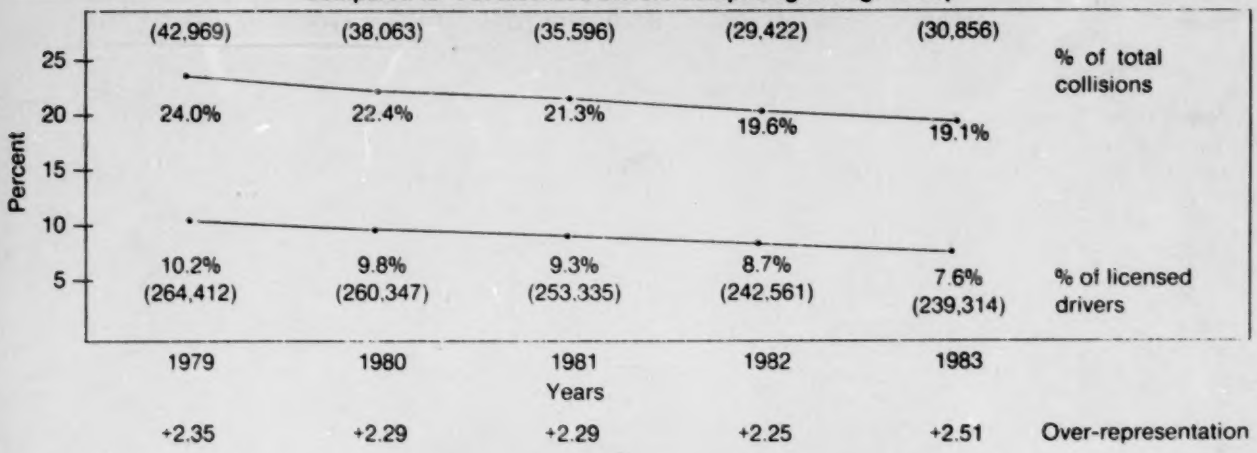


Figure 3-2 **21-24 Year Old % of Involvement in Total Collisions Compared to % of Licensed Drivers Comprising the Age Group**

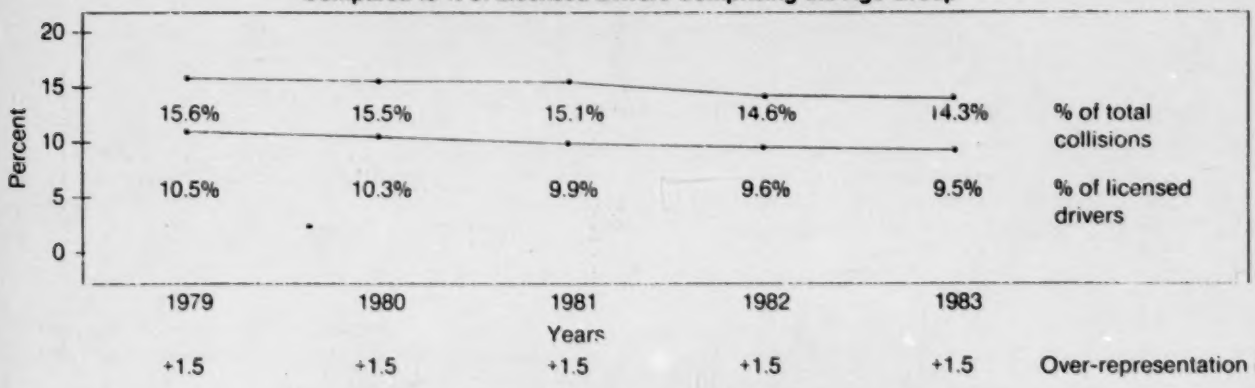


Figure 3-3 **25-29 Year Old % of Involvement in Total Collisions Compared to % of Licensed Drivers Comprising the Age Group**

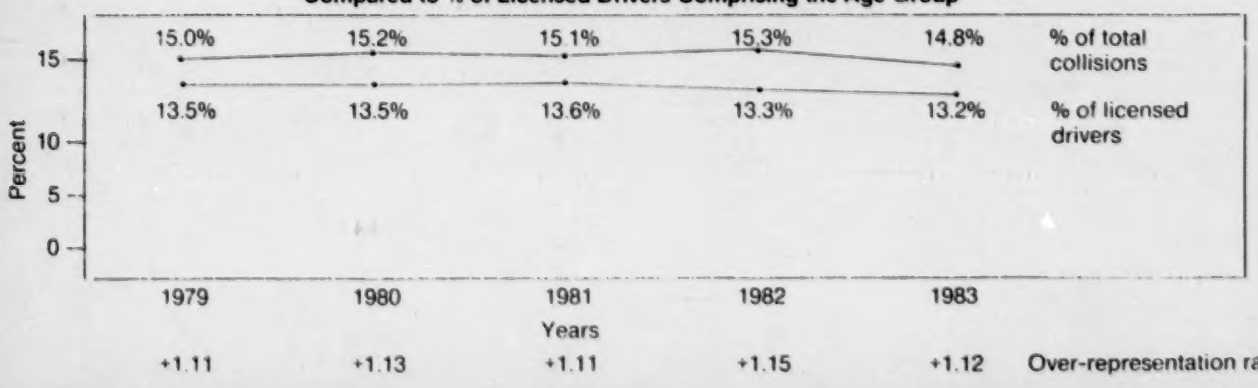
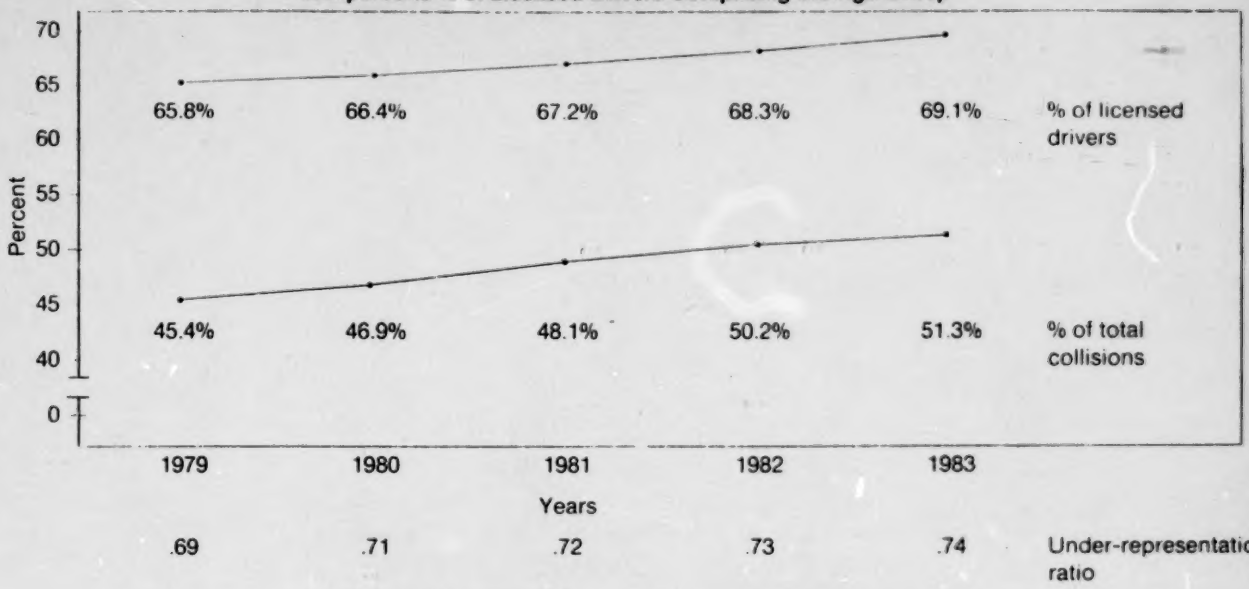


Figure 3-4 **30 Years Old and Older % of Involvement in Total Collisions Compared to % of Licensed Drivers Comprising the Age Group**



COLLISION SEVERITY BY AREA FOR YOUTHFUL DRIVERS

In 1983, urban collisions involving youthful drivers (24 years old and younger) increased slightly to 57.2% while rural collisions involving youthful drivers made up 42.8% of the total (Figure 3-5). In 1983, youthful driver injury collisions were more prevalent in urban areas, though 1983 was a continuation of a five year decline toward convergence with the rural areas (Figure 3-6). Youthful driver fatal collisions were far more common in rural areas. In 1983, 75.8% of the fatal collisions involving youthful drivers occurred in rural areas (Figure 3-7).

Figure 3-5 **Youthful Drivers Involved in Total Collisions**

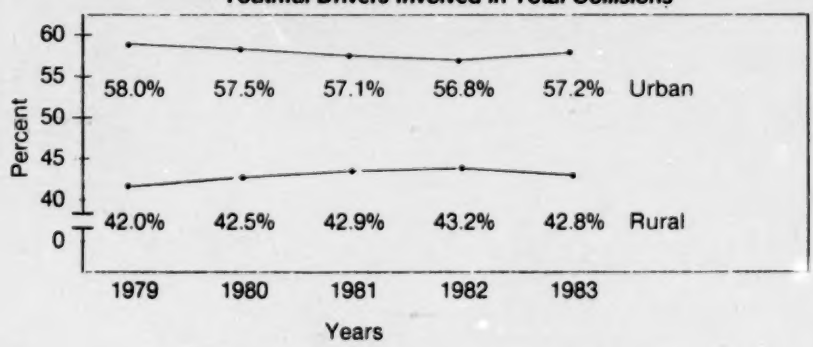


Figure 3-6 **Youthful Drivers Involved in Injury Collisions**

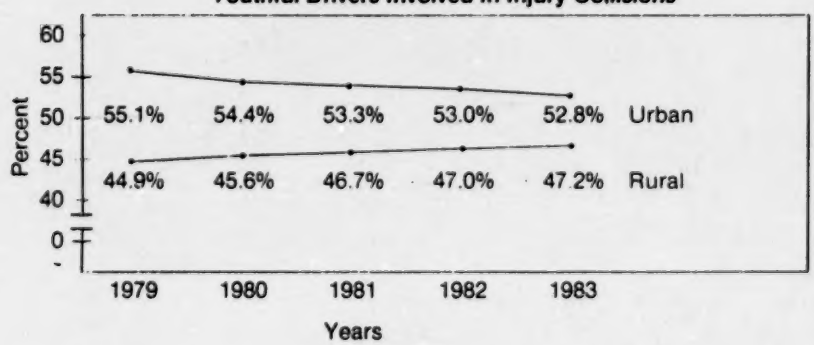
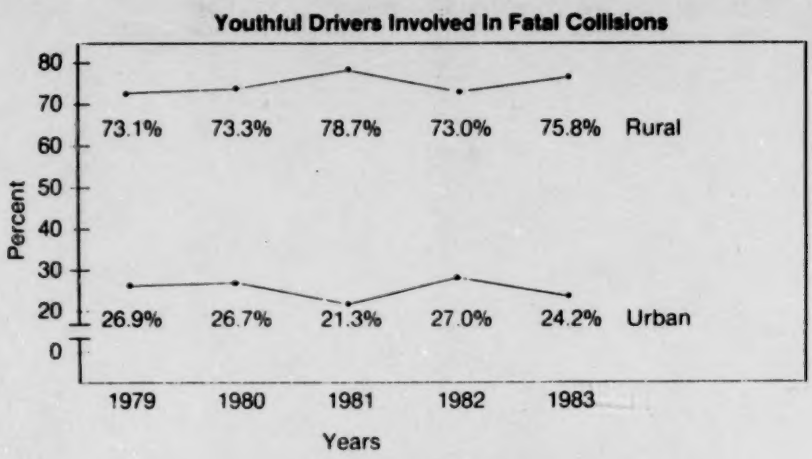


Figure 3-7



YOUTHFUL DRIVER INVOLVEMENT BY TIME

In 1983, 29.5% of all the rural fatal collisions and 18.1% of all rural reported collisions involving youthful drivers occurred on Saturday (Figure 3-8). In urban areas, Friday had the highest occurrence of collisions involving youthful drivers (18.5%) and Thursday & Friday had the greatest percentage of fatal collisions, each recording (18.8%) for this group (Figure 3-9).

Figure 3-8

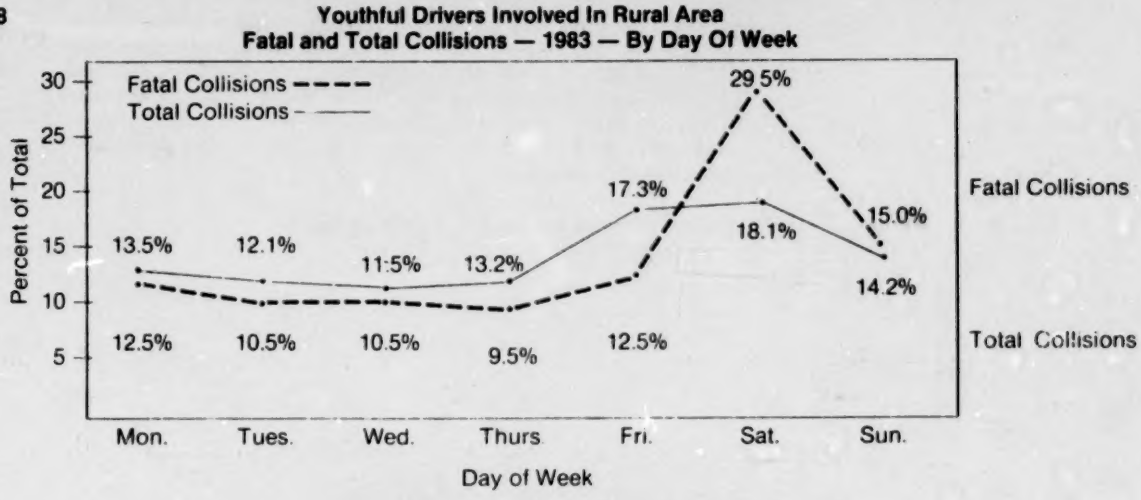
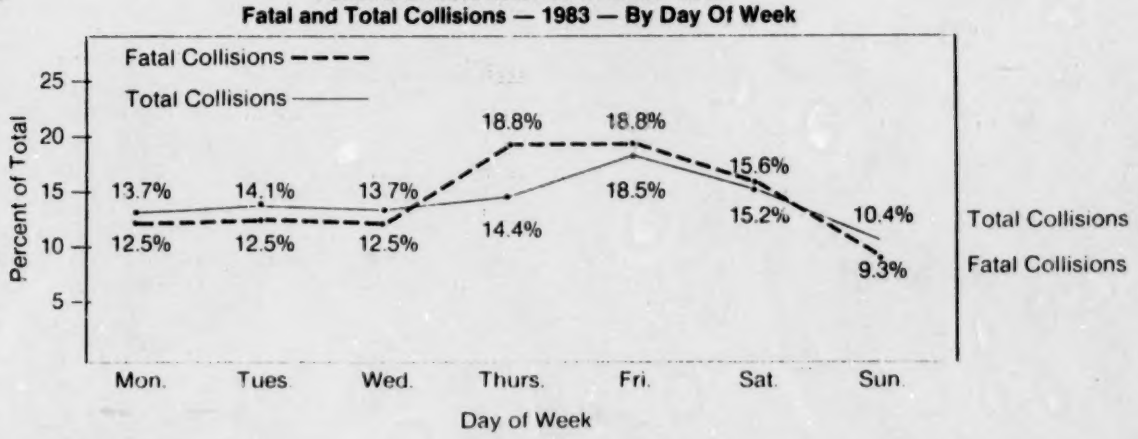


Figure 3-9



In rural areas, the six hour period from 9 PM to 3 AM recorded the highest number of youthful driver involvement in fatal crashes in 1983. These were equally divided between the two three-hour periods from 9 PM to midnight and midnight to 3 AM. The greatest percentage of total collision involvement (22.9%) for these drivers was from 3 PM to 6 PM (Figure 3-10). In the urban areas the greatest youthful involvement by time period in fatal collisions was divided between the two three-hour periods (3 PM to 6 PM) and (9 PM to midnight) each recording 18.7% of the days fatal crashes. The three hour period from midnight to 3 AM recorded 17.2% of the total. The 3 PM to 6 PM time period recorded 26.6% of the youthful drivers involved in total urban collisions (Figure 3-11).

Figure 3-10

Youthful Drivers Involved In Rural Area
Fatal and Total Collisions — 1983 — By Hour Of Day

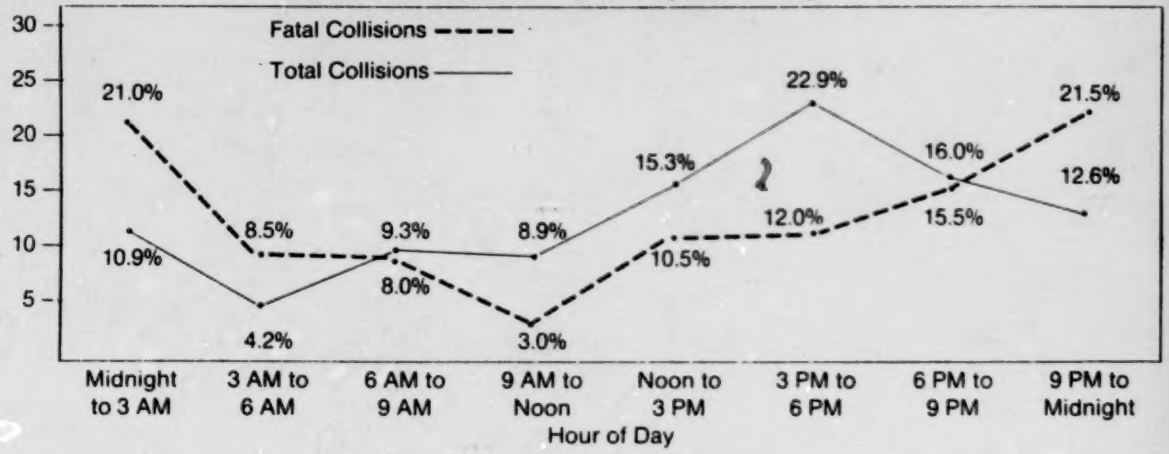
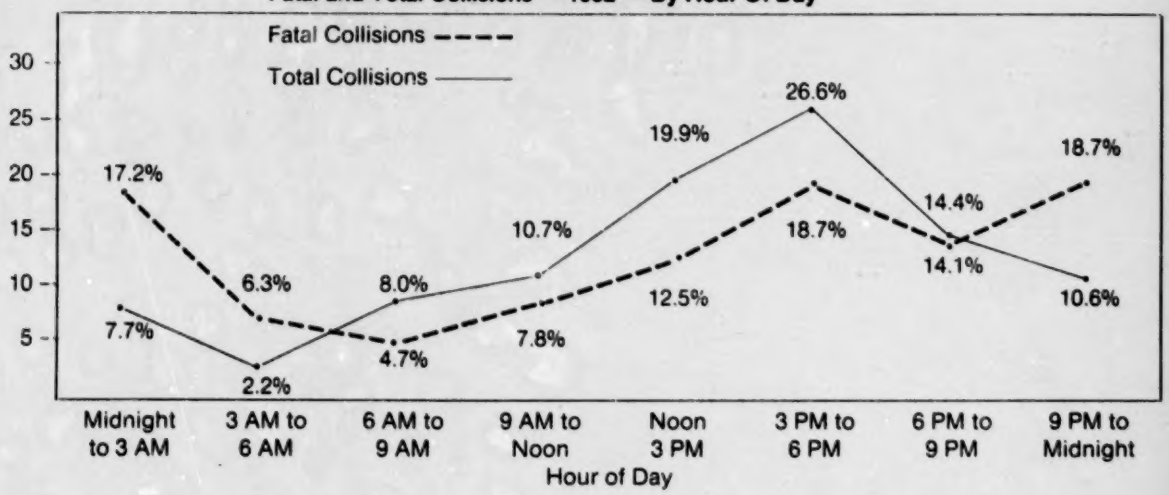


Figure 3-11

Youthful Drivers Involved In Urban Area
Fatal and Total Collisions — 1982 — By Hour Of Day



SAFETY RESTRAINT USAGE

Overview

In 1983, out of a total of 151,421 occupants involved in total collisions, 31,751 were using safety restraints. This is a usage of 21.0% and marks an increase in safety restraint usage over 1982 (Table 4-1).

Table 4-1 **USAGE RATE**

	1983	%	1982	%	1981	%	1980	%	1979	%
Restraints Used	31,751	21.0%	24,797	17.8%	25,190	15.9%	27,018	17.4%	35,864	21.3%
No Restraints Used	119,670	79.0%	114,611	82.2%	132,921	84.1%	128,264	82.6%	132,888	78.7%
Total Occupants	151,421	100.0%	139,408	100.0%	158,111	100.0%	155,282	100.0%	168,752	100.0%

In 1983, 31,745 individuals out of a total of 151,384 accident involved occupants were using a restraining device. This represents a restraint usage percentage of 21.0%. Child restraints were used by 1,095 accidents involved children. (Table 4-2). Combining all restraint devices into usage or non-usage categories, it appears that with safety restraint usage, injuries were less likely to occur and those injuries that did occur were less severe. (Appendix C).

Table 4-2 **RESTRAINT USAGE AND INJURIES SUSTAINED***

	Restraints Used		Child Restraints**		No Restraints		Total Occupants	
	Number	%	Number	%	Number	%	Number	%
Deaths	42	0.13%	3	0.27%	416	0.35%	458	0.30%
Disabling Injuries	533	1.7%	8	0.7%	4,639	3.9%	5,172	3.4%
Evident Injuries	2,450	7.7%	73	6.7%	14,285	11.9%	16,735	11.1%
Possible Injuries	3,761	11.8%	87	7.9%	13,822	11.6%	17,583	11.6%
No Injuries	24,959	78.6%	924	84.4%	86,477	72.3%	111,436	73.6%
Totals	31,745	100.0%	1,095	100.0%	119,639	100.0%	151,384	100.0%

*Excludes cases where injury severity was not stated.
**Included with Restraints Used category

In 1983, 23.6% of the female drivers used their restraints while 22.0% of the male drivers used their restraints in collisions. Passengers had a lower usage rate at 18.9% for the females and 14.8% for the male passengers. The 0-5 age group had the highest restraint usage of any age group at 42.3% usage. The age group with the lowest usage rate was the 16 - 19 year olds at 14.0% usage (Table 4-3).

Table 4-3 **USAGE RATES BY SEX AND AGE GROUP — 1979 - 1983**

	Percent Used Restraints				
Occupant	1983	1982	1981	1980	1979
Male Driver	22.0	19.1	17.4	19.3	23.4
Female Driver	23.6	20.0	18.2	19.9	24.3
Male Passenger	14.8	11.2	9.9	10.6	13.9
Female Passenger	18.9	15.3	12.6	13.5	16.4
Age 0-5	42.3	32.2	26.1	24.0	24.4
Age 6-15	14.8	11.5	9.6	9.7	12.5
Age 16-19	14.0	11.5	11.7	12.0	15.7
Age 20-24	16.3	14.3	13.4	14.8	18.7
Age 25-34	23.0	19.6	17.5	19.4	23.0
Age 35-64	23.3	22.2	20.3	22.3	26.5
Age 65 & Up	21.4	18.3	19.5	18.0	25.7

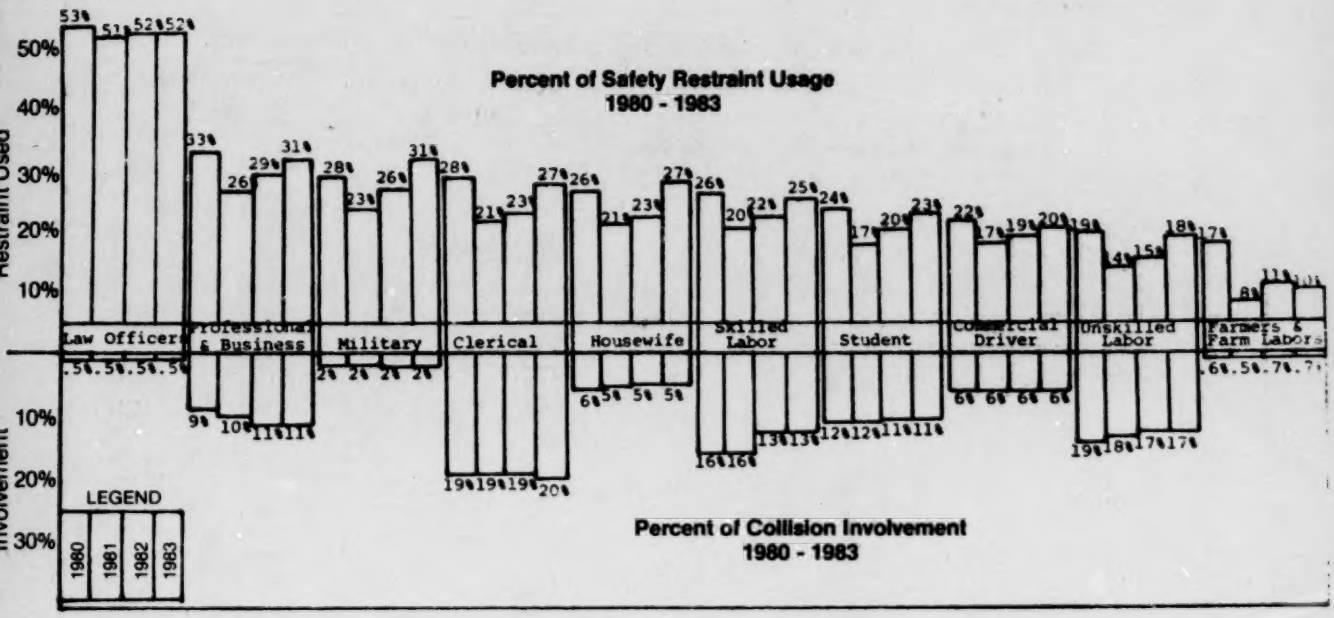
Viewing restraint usage by age in 1983, the 0-1 age group had the highest usage rate, 61.7%. The lowest rate of restraint usage was for the 14 year old occupants, they had a usage rate of 11.7%. It should be noted that every age group had a higher reported usage rate in 1983 except the 12 year olds. The largest gain in restraint usage was in the four year old and younger group. (Table 4-4). This table also depicts the type of restraint used by each age group. Child restraints are the most commonly used restraint device up to the age of three after which either lap belts or a lap and shoulder belt were the most common restraint device used.

Table 4-4 **1983 SEAT BELT USAGE BY OCCUPANT AGE**

Age	Lap Belt	Shoulder Belt	Lap & Shoulder Belt	Child Retraint	Air Bag Activated	Total Restraints Used		Restraints Not Used	
						Number	% of Total	Number	% of Total
0 - 1	75	10	68	564	0	717	61.7%	446	38.3%
2	103	3	45	244	1	396	43.0%	525	57.0%
3	124	4	70	105	0	303	37.0%	517	63.0%
4	144	7	70	47	0	268	33.2%	539	66.8%
5	95	6	57	21	0	179	26.0%	509	74.0%
6	94	3	28	7	0	132	23.3%	434	76.7%
7	65	3	32	2	1	103	20.1%	410	79.9%
8	54	2	33	0	0	89	16.7%	443	83.3%
9	46	3	37	0	0	86	17.8%	397	82.2%
10	40	1	34	0	0	75	15.0%	424	85.0%
11	45	3	34	0	0	82	15.4%	450	84.6%
12	54	6	33	0	0	93	13.2%	610	86.8%
13	54	2	49	0	0	105	13.5%	674	86.5%
14	58	5	62	0	0	125	11.7%	945	88.3%
15	119	8	97	0	0	224	12.5%	1,570	87.5%
16	380	39	419	0	1	839	15.9%	4,425	84.1%
17	441	44	413	0	1	899	14.2%	5,434	85.8%
18	461	35	409	0	2	907	13.1%	6,024	86.9%
19	394	59	397	0	1	851	13.4%	5,512	86.6%
20	418	39	422	0	0	879	14.5%	5,175	85.5%
21 - 24	1,385	194	1,866	0	6	3,451	16.8%	17,105	83.2%
25 - 29	1,545	241	2,332	0	6	4,124	21.4%	15,124	78.6%
30 - 64	5,182	842	7,889	0	15	13,928	25.1%	41,644	74.9%
65 & Over	951	123	1,037	0	3	2,114	23.6%	6,856	76.4%
Age Unknown	180	29	200	34	2	445	15.0%	2,523	85.0%
TOTAL	12,507	1,711	16,109	1,039	39	31,405	20.9%	118,713	79.1%

The usage rate of safety restraints by occupation of driver ranges from a high of 51.8% for law officers to a low of 9.9% for farmers and/or farm labor. Usage rates for all occupations, with the exception of farm labor, recorded increases in 1983 after experiencing low usage rates in 1981 (Figure 4-1).

Figure 4-1 **Collision Involvement and Safety Restraint Usage By Driver Occupation 1980 - 1983**



Freeway travel (interstates and other controlled access routes) had the highest usage rate by vehicle occupants at 27.4%. Occupants of vehicles traveling on county roads had the lowest recorded usage rate at 17.7% (Table 4-5).

Table 4-5 **RESTRAINT USAGE BY FUNCTIONAL CLASS OF ROADWAY BY YEAR**

Functional Class	1983	1982	1981	1980
Interstate and limited access	27.4%	29.0%	25.3%	29.4%
Other state routes	21.1%	17.8%	16.2%	21.4%
County roads	17.7%	15.0%	13.7%	18.7%
City streets	20.1%	16.3%	14.9%	21.4%
All others	19.8%	16.6%	16.6%	21.3%

Examining safety restraint usage by vehicle type, the passenger car had the highest reported usage rate, 22.4%. All types of vehicles recorded increases in their usage rate the past two years, however, only one, the light trucks, have reached the usage rate recorded in 1980 (Table 4-6).

Table 4-6 **SEAT BELT USAGE RATE BY TYPE OF VEHICLE DRIVERS 1980 - 1983**

Type of Vehicle	1983	1982	1981	1980
Passenger car	22.4%	19.0%	17.2%	22.8%
Light trucks (under 10,000 gross)	16.2%	13.0%	11.2%	16.1%
Heavy trucks (10,000 gross & over)	16.0%	15.2%	13.9%	18.4%
All others	21.5%	22.1%	15.0%	23.0%

On September 29, 1981, Governor John Spellman issued a directive that safety restraint usage was mandatory in all state vehicles. In 1983, of all state vehicles involved in collisions, 60.0% of the occupants were using restraints. This is down 5% from the preceding two year period when the usage rate reached 65.0%. The next highest government agency reporting was "Other" (federal government agencies) at 54.2% usage, a substantial increase from the 44.4% rate of the previous year. County government vehicles had the lowest reported usage rate at 32.3% (Table 4-7).

Table 4-7 SEAT BELT USAGE RATE BY TYPE OF GOVERNMENT VEHICLES 1980 - 1983

Type of Government Vehicle	1983	1982	1981	1980
State registered vehicles	60.0%	65.0%	65.0%	46.0%
County registered vehicles	32.3%	37.3%	30.1%	39.7%
Municipal registered vehicles	35.1%	28.1%	27.7%	30.9%
Other government registered vehicles	54.2%	44.4%	39.2%	50.0%

Out-of-state drivers had the highest reported usage rate at 28.6%, followed by drivers who were over 15 miles from their residence with a 23.7% usage rate. Local drivers, living within 15 miles of the accident scene were using restraints 22.1% of the time. All categories showed improvements in the usage rate over the past two years (Table 4-8).

Table 4-8 SEAT BELT USAGE RATE BY PROXIMITY OF DRIVER RESIDENCE 1980 - 1983

Residence Proximity	1983	1982	1981	1980
Resided within 15 miles of collision	22.1%	18.9%	17.3%	23.7%
Resided over 15 miles	23.7%	21.2%	19.3%	24.3%
Residing in other state	28.6%	24.4%	22.4%	29.3%

In examining restraint usage by seat position, drivers (left front) were the most frequent users of restraining devices, 22.5% during 1983, up from the 19.3% usage rate for 1982, but down slightly from the 1980 rate. The next most frequent users were those occupants riding in the left and right back, respectively. These positions, which include the greatest usage of child restraints, both were near the 22% usage, much above the previous three years' usage. The seat position where reported usage was the least, was the front middle at 10.6% (Table 4-9).

Table 4-9 RESTRAINT USAGE BY OCCUPANT SEAT POSITION

Occupants	1983	1982	1981	1980
Driver	22.5%	19.3%	17.7%	24.0%
Mid-front	10.6%	7.6%	7.2%	9.6%
Right front	17.0%	14.3%	12.4%	17.0%
Left back	22.2%	16.4%	12.6%	14.3%
Mid-back	14.9%	11.0%	7.7%	10.8%
Right-back	21.9%	16.2%	12.4%	14.4%
Other	4.8%	3.8%	2.7%	2.6%
TOTAL	21.0%	17.8%	16.0%	21.5%

Further examining restraint usage by seat position for age, Table 4-10 presents the usage by age group. The right back and left back, respectively, for the 0 - 4 age group had the highest reported usage rates at over 60%. Lowest reported usage rates for the 0 - 4 age group were in the "other" position (rear end of station wagons or vans) at 12.8%. For the 5-9 age group, the most frequent safety restraint usage also occurred in the left back and right back seat positions, 28.7% and 27.2%. The right front seat position recorded a usage rate of 21.7%. The 10-14 age group had its greatest reported restraint usage occur in the right front and right back seat positions, 16%. The driver's position had the greatest reported usage rate for all the other age groups, ranging from a 26.1% usage rate for the 30-64 year old group to a low of 16.7% for drivers 15 to 20 years of age.

The positions with the lowest reported usage rate were the mid-front and mid-back seat position reporting 2.5% and 2.5% for the 15-20 age group. This held true for all age groups with the exceptions of the 65 and over age group where the mid-back and right back reported the lows with 8.7% and 10.6% respectively.

Table 4-10 **RESTRAINT USAGE BY OCCUPANT AGE AND SEAT POSITION 1983**

Seat Position	0 - 4	5 - 9	10-14	15-20	21-24	25-29	30-64	65 & Over
Driver	—	—	—	16.7%	18.8%	22.9%	26.1%	24.4%
Mid-front	31.3%	10.2%	4.6%	2.5%	6.6%	8.2%	9.2%	15.7%
Right-front	39.6%	21.7%	16.1%	10.9%	12.6%	15.9%	21.1%	23.1%
Left-back	60.3%	28.7%	14.6%	8.9%	6.8%	10.7%	12.4%	16.2%
Mid-back	39.3%	14.5%	6.8%	3.5%	6.3%	6.3%	10.9%	8.7%
Right-back	66.6%	27.2%	16.0%	7.5%	8.6%	14.0%	16.0%	10.6%
Other	12.8%	6.7%	2.5%	0.9%	0%	0%	7.3%	9.1%
Seat Location Unknown	22.8%	11.7%	3.5%	0.9%	2.4%	7.5%	6.1%	6.3%

Table 4-11 presents a more detailed breakdown of injury severity by type of restraint used. It should be noted that only 42 of the 458 deaths happened to occupants using their restraints. Of the 5,172 individuals sustaining disabling injuries from collisions, 533, or about 1 in 10, were using restraints.

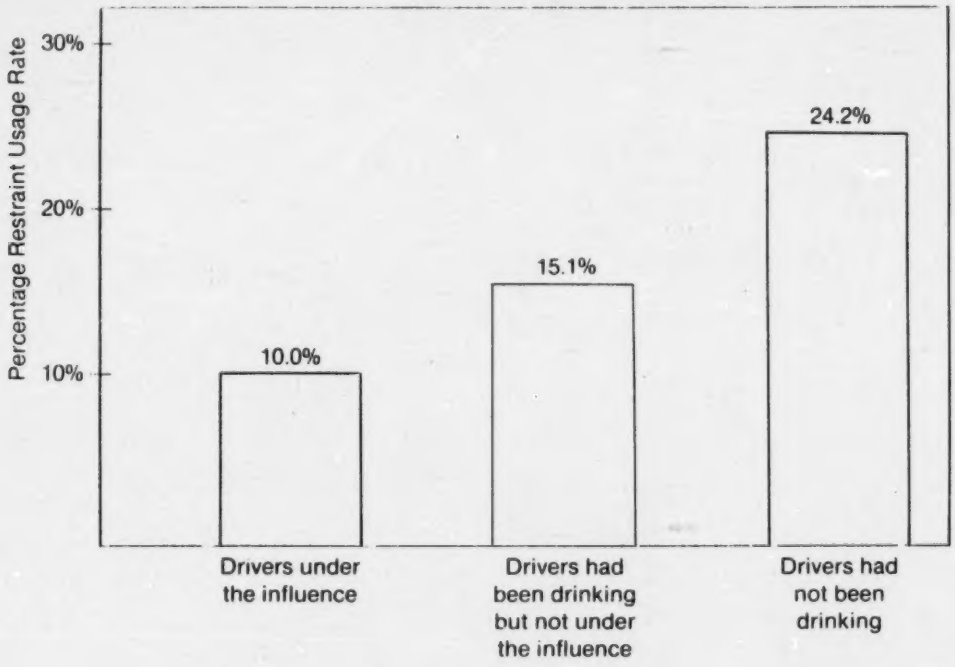
Table 4-11 **TYPES OF RESTRAINTS USED BY SEVERITY OF INJURY — 1983**

	Number Used		Deaths		Disabling Inj.		Evident Injury		Possible Injury		No Injury	
Type	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Lap Belt	12,656	8.4	17	3.7	193	3.7	976	5.8	1,359	7.7	10,111	9.1
Shoulder Belt	1,722	1.1	1	0.2	23	0.4	134	0.8	204	1.2	1,360	1.2
Lap & Shoulder Belt	16,234	10.7	21	4.6	308	6.0	1,264	7.6	2,111	12.0	12,530	11.2
Child Restraint	1,095	0.7	3	0.7	8	0.2	73	0.4	87	0.5	924	0.8
Air Bag (Activated)	38	*	0	0.0	1	*	3	*	0	0.0	34	*
No Restraints	119,639	79.0	416	90.8	4,639	89.7	14,285	85.4	13,822	78.6	86,477	77.7
Total Occupants	151,384	100.0	458	100.0	5,172	100.0	16,735	100.0	17,583	100.0	111,436	100.0

*Less Than 1/10 of 1 percent.

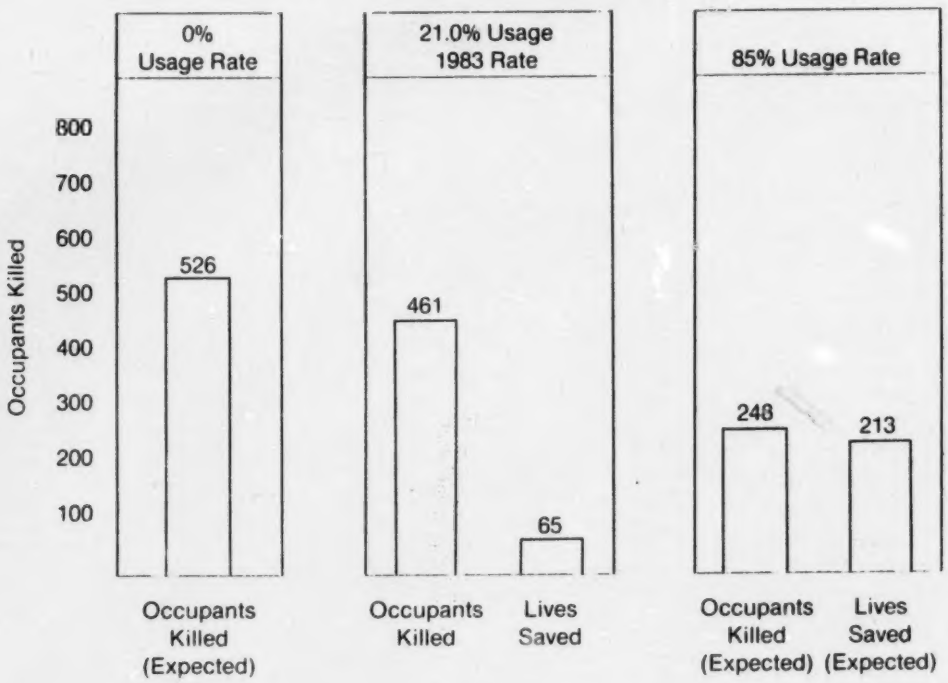
Among drivers who had been drinking, there was a greater tendency not to use restraints than among drivers who had not been drinking. Of the drivers involved in collisions in 1983, only 10% of those who were under the influence used their safety belt. Thirteen point five percent of the drivers who had been drinking but were not under the influence used their safety restraints while 24.2% of the drivers who had not been drinking used their restraints. (Figure 4-2).

Figure 4-2 **Restraint Usage By Sobriety**



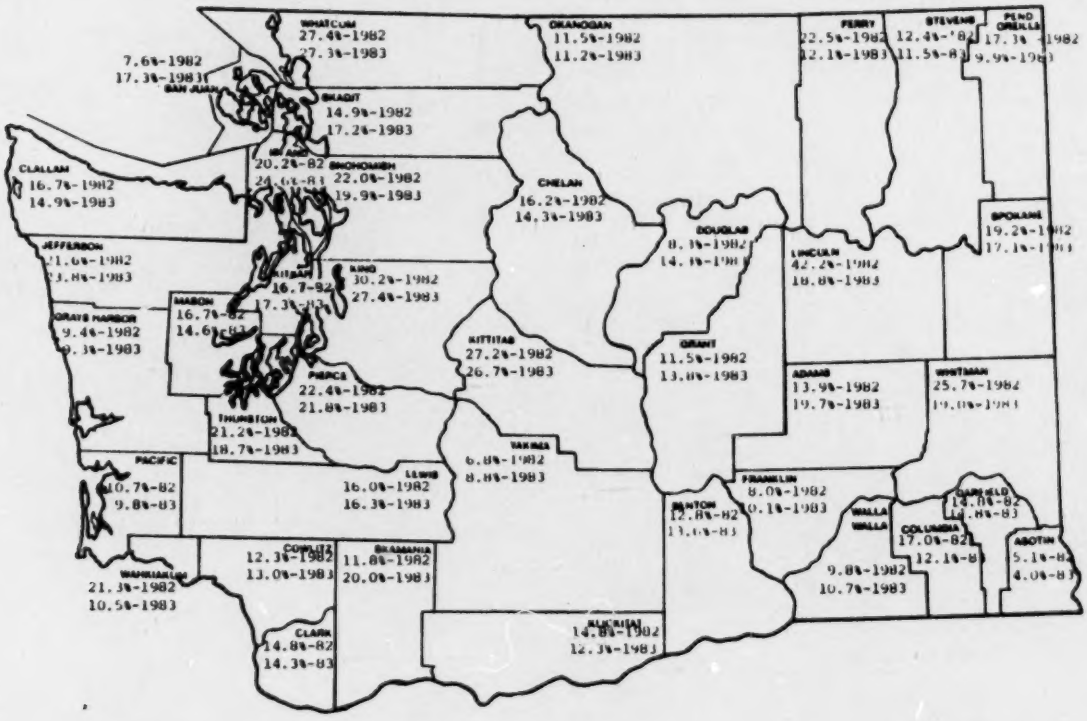
Based on the data that was obtained for restraint usage and the number of fatalities occurring in 1983, it is possible to project the number of fatalities that would have occurred under varying restraint usage rates (Figure 4-3). The center portion of the figure depicts the situation that existed in 1983. Occupant restraint devices were used by 21.0% of the occupants involved in crashes. At this usage rate there were 461 fatalities. Based on this information, it is estimated that 65 lives were saved by restraint usage. The left side of the figure presents the situation that could have been expected to exist if no restraints were used. Assuming that the usage rate among vehicle occupants could be brought up to the 85% level, it is projected that there would have been 248 fatalities and 213 more lives would have been saved. Clearly, based on this projective technique, the higher the usage rate, the greater the savings in lives. (Appendix C for computation)

Figure 4-3 **Occupant Restraints Usage in Fatal Crashes**



A graphic depiction of restraint use by county is presented in Figure 4-4. King County had the highest usage rate of all counties in the state at 27.4%, down slightly from the 30.2% rate of the previous year. Whatcom County had the second highest usage rate at 27.3%, nearly identical to the 1982 rate. The county with the lowest usage rate was Asotin County at 4.0% usage, down from the 5.1% rate of a year ago.

Figure 4-4 **Seat Restraint Usage Rate By County — 1982/83**



1983
21.0% & Greater — 6
15.0% — 20.9% — 11
14.9% & Under — 22

STATE OF WASHINGTON
STATEWIDE USAGE RATE 17.9%-1982
21.0%-1983

MOTORCYCLE COLLISIONS

Overview

In 1983, motorcycle fatal, injury and total collisions decreased 30.0%, 11.9%, and 11.8% respectively when compared to the previous 4-year baseline average. Registration in 1983 totaled 127,950 motorcycles, a decrease of 4.7% over the baseline period. The motorcycle collision rate of 2.59 for 1983 decreased 7.2% from the baseline rate of 2.79 motorcycle collisions per every 100 registered.

Table 5-1 MOTORCYCLE COLLISIONS 1979 — 1983

	1979	1980	1981	1982	Previous 4 Year Average	1983	Change 83-4 Yr. Average
Total Collisions	3,992	3,914	3,728	3,376	3,753	3,312	-11.8%
Fatal Collisions	116	116	104	103	110	77	-30.0%
Fatal Collisions Ratio (Fatal Collisions per 1,000 motorcycle coll.)	29.1	29.6	27.9	30.9	29.3	23.2	+20.8%
Fatal Registration Rate (Fatal Collisions per 1,000 motorcycles reg.)	.895	.854	.743	.782	.819	.602	-26.5%
Injury Collisions	3,471	3,373	3,186	2,867	3,224	2,839	-11.9%
Motorcycle Registration	129,641	135,899	139,931	131,667	134,285	127,950	- 4.7%
Total Collision Registration Rate (Motorcycle involved per 100 registered)	3.08	2.88	2.66	2.56	2.79	2.59	- 7.2%

MOTORCYCLE COLLISIONS BY LOCATION

A breakdown by type of motorcycle collision by rural, urban and statewide totals for 1983 indicates 52.9% of the total collisions and 52.0% of the injury collisions occurred in urban areas, while 61% of the fatal collisions occurred in rural areas (Table 5-2).

Table 5-2 MOTORCYCLE COLLISION DATA

	1983			1982		
	Urban	Rural	Statewide	Urban	Rural	Statewide
Total Collisions	1,752	1,560	3,312	1,816	1,560	3,376
Fatal Collisions	30	47	77	34	69	103
Total Fatalities	30	47	77	36	73	109
Injury Collisions	1,475	1,364	2,839	1,521	1,346	2,867
Property Damage Only, Collisions	247	149	396	261	145	406
All Persons Injured	1,815	1,740	3,555	1,838	1,700	3,341
Motorcyclists Killed	30	47	77	36	72	108
Motorcyclists Injured	1,704	1,647	3,351	1,697	1,592	3,289

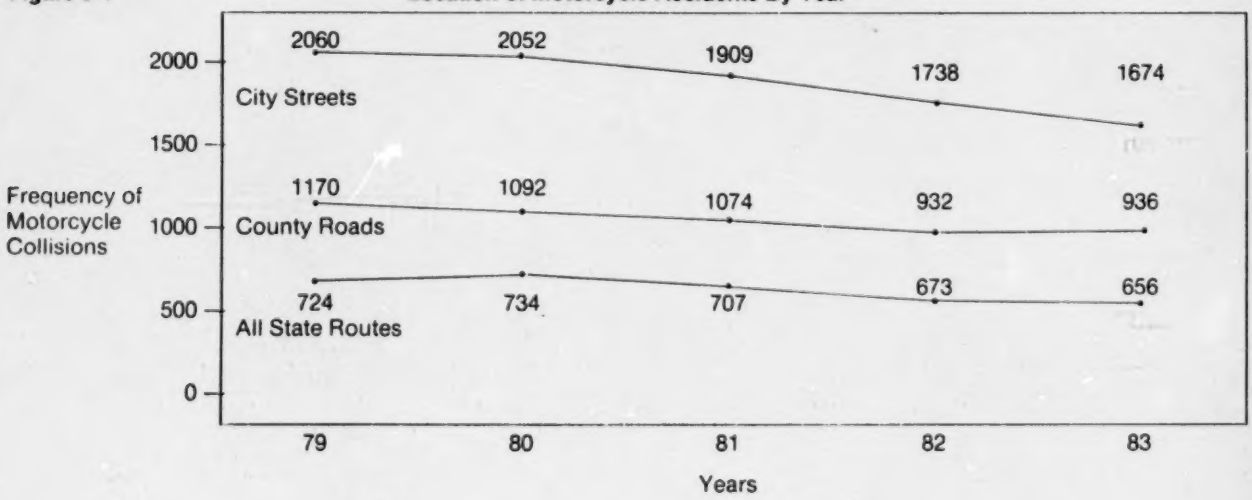
A further delineation of 1983 motorcycle collisions by road type indicates approximately 50.5% of the total collisions, 49.7% of the injury collisions and 32.5% of the fatal accidents occurred on city streets. About 29% of the injury collisions and 28% of the total collisions and 35.1% of the fatal collisions happened on county roads. State routes recorded 19.7% of the injury and 19.8% of the total collisions and 31.2% of the fatal motorcycle collisions (Table 5-3).

Table 5-3 **LOCATION OF MOTORCYCLE COLLISIONS — 1983**

State Routes	Total Collisions	Fatal Collisions	Injury Collisions	P.D. Only Collisions	Motor-cyclist Killed	Motor-cyclist Injured
Interstate System	170	6	145	19	6	164
Other Full Control	47	3	38	6	3	44
U.S. Rt. No. (excluding city streets)	82	3	73	6	3	87
State Rt. No. (excluding city streets)	357	12	303	42	12	375
County Roads	936	27	829	80	27	996
City Streets (including U.S. and State Rt. in cities)	1,674	25	1,412	237	25	1,639
Other Traffic Ways	46	1	39	6	1	46
TOTAL	3,312	77	2,839	396	77	3,351

Total frequency of motorcycle collisions occuring on city streets and state highways decreased during 1983. County roads recorded a slight increase. The decreases follow a three year trend on city streets and state routes (Figure 5-1).

Figure 5-1 **Location of Motorcycle Accidents By Year**



MOTORCYCLE COLLISIONS BY AGE GROUP

The younger the motorcycle rider, the greater the over-representation in the accident population compared to the percentage of licensed motorcycle drivers comprising that age group. This trend holds until the drivers reach the 25-29 year old age group, at which point they become under- represented in the motorcycle accident population. In 1983, over 75.3% of all fatal, and over 70% of all injury and total motorcycle collisions involved drivers under 30 years of age (Table 5-4).

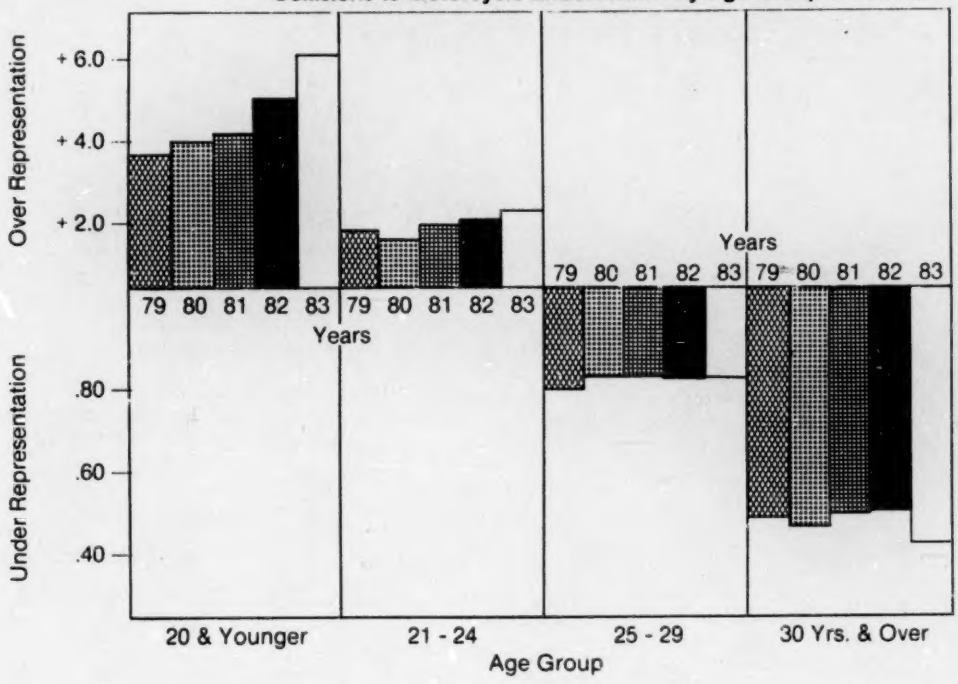
Table 5-4 **COMPARISON OF MOTORCYCLE RIDERS INVOLVED IN COLLISIONS TO NUMBER LICENSED IN 1983**

	Motorcyclist Involved In:						Percent of Licensed Driver	Over/Under Representation
	Fatal Collisions		Injury Collisions		Total Collisions			
	No.	% of Total	No.	% of Total	No.	% of Total		
Under 16	2	2.60%	65	2.31%	67	2.09%	—	—
16	2	2.60	62	2.20	67	2.09	0.13%	16.08
17-18	6	7.79	285	10.13	318	9.94	1.28	7.77
19-20	13	16.88	382	13.57	443	13.84	3.21	4.31
21-22	6	7.79	379	13.47	435	13.59	5.03	2.70
23-24	8	10.39	285	10.13	328	10.25	6.43	1.59
25-29	21	27.27	518	18.41	592	18.50	22.16	.83
30-34	11	14.29	346	12.30	393	12.28	20.93	.59
35-39	3	3.90	204	7.25	226	7.06	14.69	.48
40-44	2	2.60	118	4.19	132	4.13	8.92	.46
45-54	0	—	106	3.77	127	3.97	10.21	.39
55-64	1	1.30	52	1.84	57	1.78	5.16	.34
65 and over	0	—	12	0.43	15	0.47	1.85	.25

Collapsing the under 30 years of age motorcycle riders into three groups and comparing 1983 accident data to the 1979-1982 baseline period, the 20 and younger age group showed the greatest over-representation in total motorcycle accident involvement when compared to the percentage of licensed motorcycle riders comprising that age group. The amount of over-representation, within this group, has increased each of the last five years. The 21-24 year old age group was over-represented, though not to the extent of the 20 and younger group. The 21-24 year old group has been increasing the degree of its over-representation annually since 1979, despite a slight drop in 1980. The 25-29 year old and the 30 year old and older age groups are under-represented in total collisions compared to percentage of licensed motorcycle riders these age groups comprise. The under-representation within these groups has been consistent throughout the baseline period. In 1983, the amount of under-representation remained constant when compared to the previous year for the 25-29 age group. The 30 years & over group has remained fairly constant from 1979 thru 1982. However, in 1983 the under-representation ratio decreased slightly for this age group (Figure 5-2).

Figure 5-2

Comparison of Motorcycle Driver Over/Under Representation Collisions to Motorcycle Endorsement by Age Group 1979-1983



PRINCIPAL VIOLATIONS IN ACCIDENTS BY AGE GROUPS

Speed too fast for conditions was the principal cause of motorcycle collisions for all age groups, contributing to 22.7% of the 1983 motorcycle violations. Motorcyclist driving while intoxicated was the second most predominate violation contributing to 12.7% of the total. Speed over the legal limit was the third leading violation contributing to 11.7% of all motorcycle driver violations (Table 5-5).

Table 5-5 **MOTORCYCLIST VIOLATIONS BY AGE — 1983**

(Investigated Collisions Only)

Violation	Total Viol.	% of Total	AGE OF VIOLATOR							
			20 & Under	21 24	25 29	30 34	35 44	45 54	55 & Over	Not Stated
Speed — Conditions	514	22.7	160	111	97	63	48	16	8	11
Speed — Over Legal	265	11.7	108	66	43	17	24	3	0	4
Failed to Yield	149	6.6	69	29	14	12	12	2	3	8
D.W.I.	287	12.7	52	82	70	47	23	7	1	5
Following Too Closely	97	4.3	35	21	14	10	14	1	2	0
Improper Passing	154	6.8	49	36	37	9	7	9	3	4
Operating Defective Equipment	152	6.7	61	32	31	11	13	2	0	2
Disregard Signs/ Signals	93	4.1	30	21	18	8	10	0	0	6
Over Centerline	52	2.3	22	10	6	7	2	4	0	1
Other Violations	501	22.1	147	108	82	63	50	20	20	11
TOTAL	2,264	100%	733	516	412	247	203	64	37	52

MOTORCYCLE COLLISIONS BY FIRST HARMFUL EVENT

In 1983 the most common first harmful event causing a single motorcycle collision was overturning. This cause held for all age groups. In multiple vehicle collisions involving motorcycles the angular collision was most prevalent condition (15.9%). Rear-end collisions was the next most common event for multiple vehicle motorcycle collisions at 14.5% of the total (Table 5-6).

Table 5-6 **MOTORCYCLE COLLISIONS BY FIRST HARMFUL EVENT — 1983**

Type of Collision (First Harmful Event)	Total All	% of Total	Age of Motorcyclist						
			20 & Under	21 24	25 29	30 34	35 44	45 54	55 & Over
Single Motorcycle Coll:									
Struck Fixed Object	381	11.9%	107	89	79	55	32	10	9
Struck Other Object	19	0.6%	5	9	3	1	1	0	0
Overturned	735	23.1%	166	177	140	101	98	35	18
Motorcycle-Pedestrian	17	0.5%	7	4	2	3	1	0	0
Motorcycle-R.R. Train	0	—	0	0	0	0	0	0	0
Motorcycle-Pedalcyclist	17	0.5%	3	4	4	3	2	1	0
Motorcycle-Animal	65	2.0%	15	7	14	11	12	4	2
Non-Collision	30	0.9%	6	7	5	5	5	1	1
Total Single Motorcycle Coll's.	1,264	39.5%	309	297	247	179	151	51	30
Multiple Vehicle Coll:									
Head-on	48	1.5%	21	7	9	2	5	3	1
Rear-End	465	14.5%	130	97	86	59	58	18	17
Sideswipe	158	4.9%	42	41	33	15	18	6	3
Angular Direction	507	15.9%	180	128	86	46	48	14	5
Enter/Leave Driveway	401	12.5%	115	97	72	48	37	19	13
One Left/One Straight-Opp. Dir.	223	7.0%	65	59	34	28	24	10	3
Other Multiple Vehicle Coll.	134	4.2%	33	37	25	16	17	6	0
Total Multiple Vehicle Coll.	1,936	60.5%	586	466	345	214	207	76	42
TOTAL MOTORCYCLE COLL.	3,200	100.0%	895	763	592	393	358	127	72

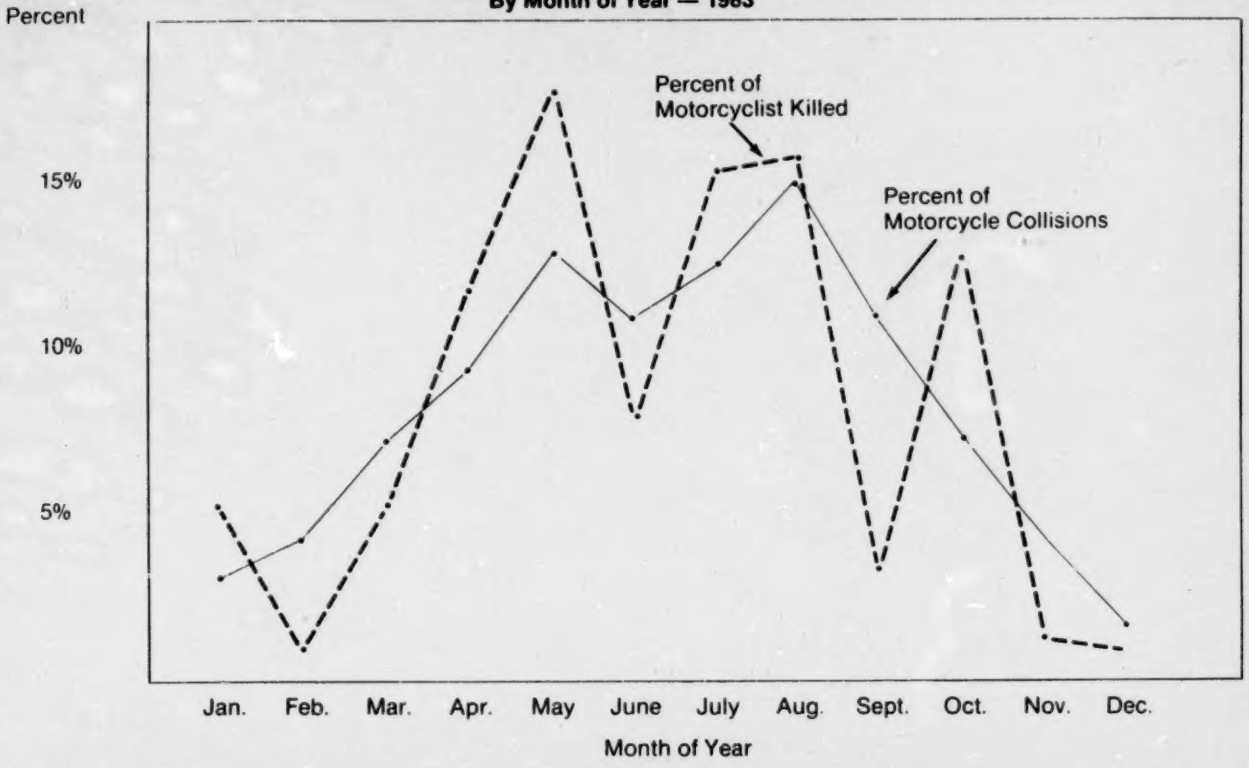
*Less than 1/10th of one percent

TIME OF MOTORCYCLE ACCIDENT OCCURRENCE

The warmer weather months (May-Sept.) of 1983 saw the greatest frequency of motorcycle collisions and fatalities (Figure 5-3)

Figure 5-3

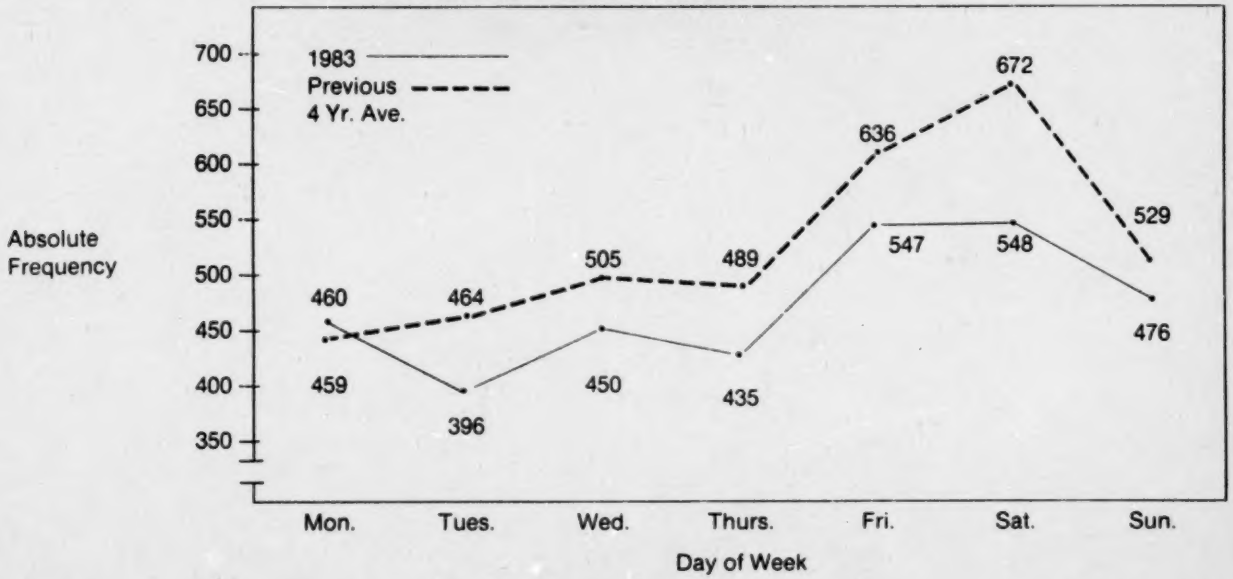
Comparison of Motorcycle Collisions and Fatalities By Month of Year — 1983



In comparing the frequencies of motorcycle collisions by day of week, Friday and Saturday are seen as the two days with the highest rate of occurrence. This trend has been consistent throughout the four year baseline period and continued in 1983 as well. In 1983, total motorcycle collisions were down 11.8% over the average of the baseline period (Figure 5-4).

Figure 5-4

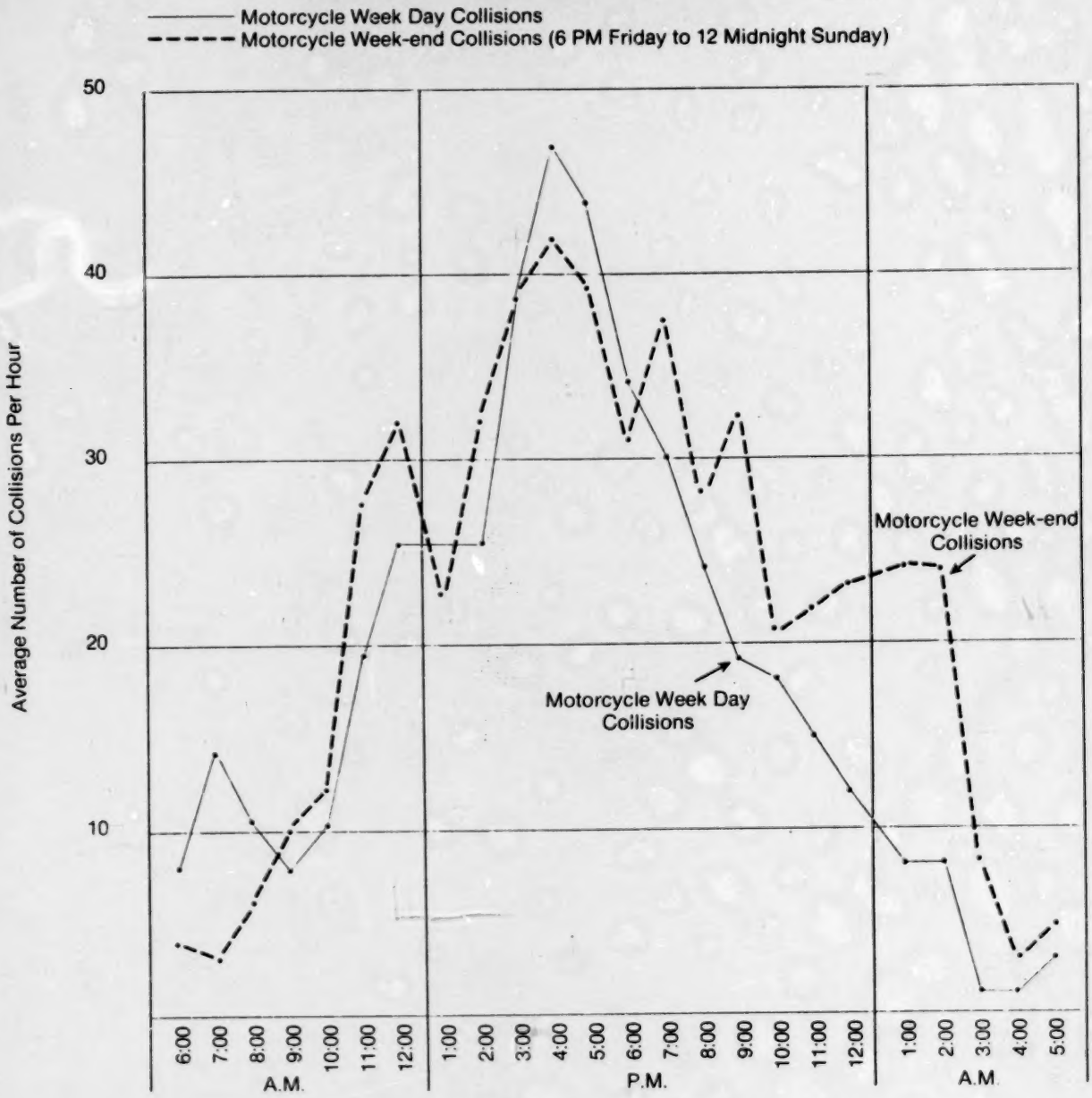
Frequency of Motorcycle Collisions by Day of Week Over the Period 1983 & Previous 4 Year Ave.



A further breakdown by hour of day when collisions were occurring in 1983 revealed the late afternoon (3 PM) to the early evening (8 PM) to be the worst period of the day. This finding was consistent for both weekdays and weekends. The weekends, additionally, had an extended high average frequency of collisions into the early morning hours (Figure 5-5).

Figure 5-5

Average Number of Motorcycle Collisions by Hour of Day on Weekdays, Weekends and Weeklong in 1983



PEDALCYCLES

Overview

In 1983, total pedalcycle accidents were up 15.1% over the previous four-year baseline period. The number of pedalcyclists killed increased 7.7% from the baseline period. The number of individuals injured was up 15.9% in 1983 (Table 6-1).

Table 6-1 **PEDALCYCLE TRAFFIC COLLISIONS 1979 — 1983**

	1979	1980	1981	1982	Previous 4 Yr. Avg.	1983	% of Change 1983 to 4 Yr. Avg.
Total Collisions	1,041	1,097	1,083	1,056	1,069	1,230	+ 15.1%
Persons Killed	14	11	20	8	13	14	+ 7.7%
Persons Injured	1,071	1,125	1,094	1,078	1,092	1,266	+ 15.9%

RURAL — URBAN PEDALCYCLE ACCIDENTS

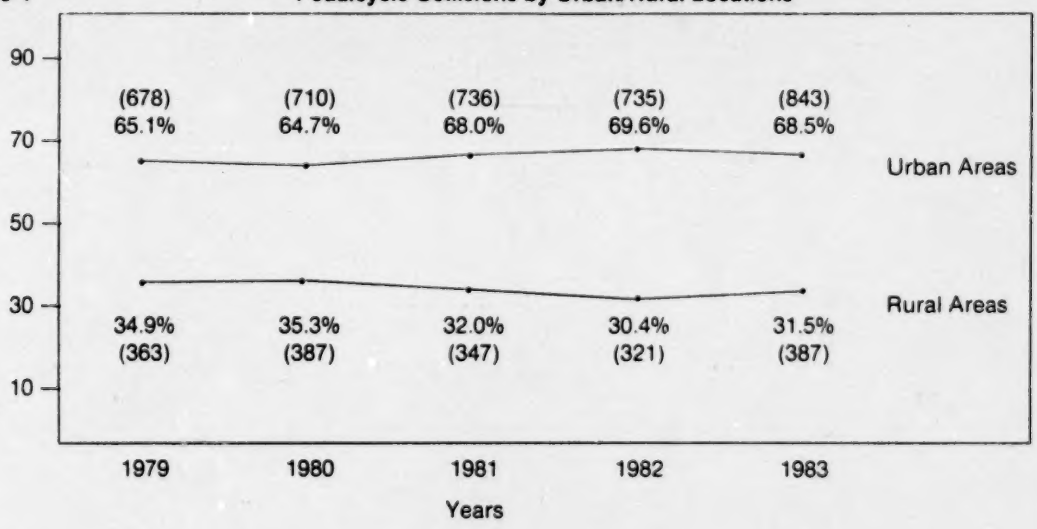
Total pedalcycle collisions in 1983 were up 9.3% in rural areas and up 17.9% in urban areas compared to a four-year baseline period. The number of individuals killed in rural areas was 10 in 1983, the same as the baseline period and 4 individuals died in urban pedalcycle collisions. Rural injuries from pedalcycle collisions were up 10.8% in 1983 over the four-year baseline period. This compares with a 18.5% urban gain over the same time period (Table 6-2).

Table 6-2 **RURAL — URBAN PEDALCYCLE ACCIDENTS**

Rural Areas	1979	1980	1981	1982	Previous 4 Yr. Avg.	1983	% of Change 1983 to 4 Yr. Avg.
Total Collisions	363	387	347	321	354	387	+ 9.3%
Persons Killed	12	9	14	4	10	10	NC
Persons Injured	364	395	353	335	362	401	+ 10.8%
Urban Areas							
Total Collisions	678	710	736	735	715	843	+ 17.9%
Persons Killed	2	2	6	4	3	4	+ 33.3%
Persons Injured	707	730	741	743	730	865	+ 18.5%

Sixty-eight point five percent of the Pedalcycle collisions occurred in the urban areas during 1983. This is down slightly from the 69.6% urban percentage in 1982, but follows closely the previous four year trend. 31.5% occured in the rural areas of the state, up slightly from 1982, but down from the previous 1979-81 period.

Figure 6-1 **Pedalcycle Collisions by Urban/Rural Locations**



PEDALCYCLIST KILLED AND INJURED — BY AGE

In 1983, 64.3% of the pedalcyclists killed were between the ages of 10 and 19, while 52.1% of those injured fell into this age bracket. The number of pedalcyclists killed in 1983 was up 7.7% compared to the 4 year average, and injuries rose 14.4% (Table 6-3).

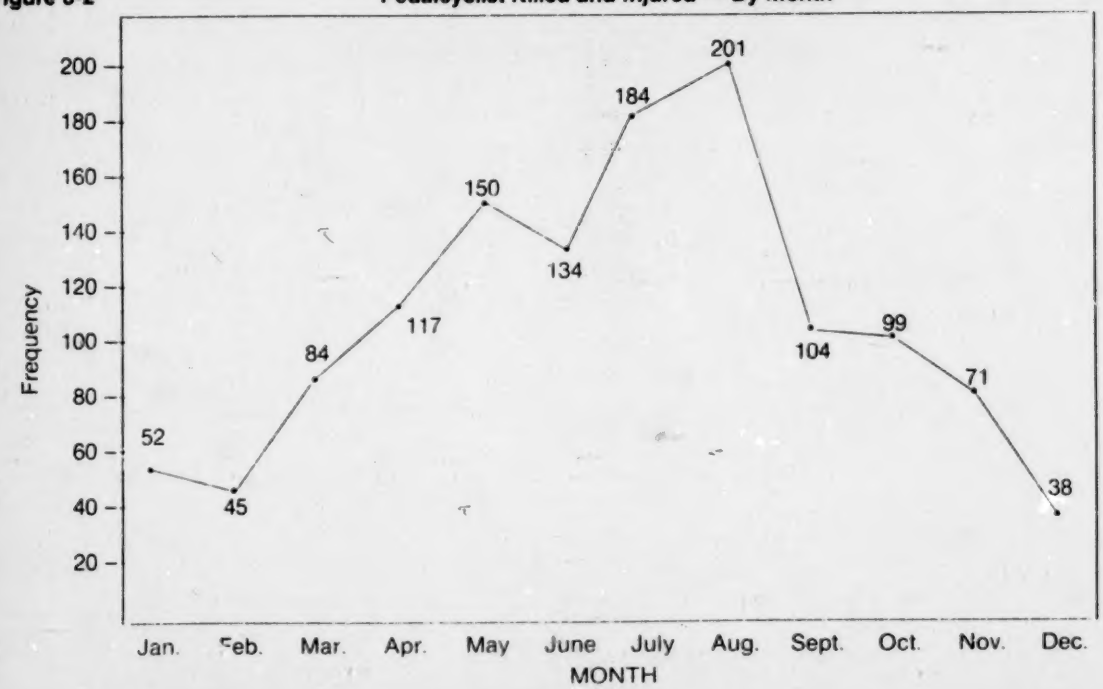
Table 6-3 **AGE OF PEDALCYCLIST KILLED AND INJURED — 1979 - 1983**

	Killed							Injured						
Age	1979	1980	1981	1982	4 Yr. Avg.	1983	% of Change	1979	1980	1981	1982	4 Yr. Avg.	1983	% of Change
0 to 4	0	0	2	1	1	1	N/C	23	21	14	16	19	21	+ 10.5%
5 to 9	4	2	4	1	3	1	- 67.0%	201	217	180	160	190	180	+ 5.3%
10 to 14	5	5	2	1	3	5	+ 66.7%	338	365	306	331	335	404	+ 20.6%
15 to 19	2	2	5	1	3	4	- 33.3%	200	203	201	197	200	240	+ 20.0%
20 to 24	1	1	4	0	2	2	N/C	98	119	124	103	111	113	+ 0.2%
25 to 34	0	1	0	1	1	0	- 100.0%	76	97	118	126	104	139	+ 33.7%
35 to 44	0	0	1	0	0	0	N/C	20	26	43	31	30	47	+ 56.7%
45 to 54	1	0	0	1	1	0	- 100.0%	12	10	13	15	13	11	- 15.4%
55 to 64	1	0	1	1	1	0	- 100.0%	9	4	12	7	8	11	+ 37.5%
65 to 74	0	0	1	1	1	1	N/C	4	7	5	4	5	4	- 20.0%
75 and Older	0	0	0	0	0	0	—	1	3	3	2	2	4	+ 100.0%
Not Stated	0	0	0	0	0	0	—	89	53	60	56	65	63	- 3.1%
Total	14	11	20	8	13	14	+ 7.7%	1,071	1,125	1,079	1,048	1,081	1,237	+ 14.4%

PEDALCYCLE FATAL AND INJURY ACCIDENTS — BY MONTH

The warmer weather months of April through October contain a majority of the injury and fatal pedalcycle accidents. This seven-month period has had approximately 80% of the year's total injuries and fatalities for the period of 1979 through 1983. (Figure 6-2).

Figure 6-2 **Pedalcyclist Killed and Injured — By Month**



The cities of Bellingham, Olympia, and Wenatchee recorded the highest pedalcycle collision rates in the state during 1983 with a 71.9, 71.4, and 64.5 deaths per 100,000 population respectively. The city of Olympia had the highest pedalcyclist injury rate (78.6 per 100,000). They also recorded one pedalcycle fatality. Seattle had the greatest number of pedalcycle collisions and injuries but their collision and injury rate was slightly below the statewide average 44.6 injuries per 100,000 population (Figure 6-3).

Figure 6-3

Pedalcycle Collision Rate By Population
Cities 15,000 Population and Greater
1983

Population		Pedalcycle Deaths	Death *Rate	Pedalcycle Injuries	Injury *Rate	Total Pedalcycle Collisions	Collision *Rate
250,000 and Over							
Seattle	489,700	1	.20	213	43.5	212	43.3
100,000 to 250,000							
Spokane	170,200	0	-0-	88	51.7	84	49.4
Tacoma	158,400	0	-0-	85	53.7	81	51.1
50,000 to 100,000							
Bellevue	73,900	0	-0-	42	56.8	43	58.2
Everett	56,200	0	-0-	12	21.4	12	21.4
25,000 to 50,000							
Yakima	48,500	0	-0-	24	49.5	20	41.2
Bellingham	45,900	0	-0-	36	78.4	33	71.9
Vancouver	42,600	0	-0-	16	37.6	17	39.9
Kennewick	35,700	0	-0-	7	19.6	8	22.4
Bremerton	35,475	0	-0-	19	53.6	21	59.2
Renton	32,700	0	-0-	14	42.8	13	39.8
Richland	32,000	0	-0-	12	37.5	11	34.4
Longview	30,100	0	-0-	9	29.9	10	33.2
Auburn	29,000	0	-0-	12	41.4	11	37.9
Olympia	28,000	1	3.57	22	78.6	20	71.4
Edmonds	27,000	0	-0-	9	33.3	9	33.3
Redmond	26,300	0	-0-	8	30.4	7	26.6
Walla Walla	25,600	0	-0-	9	35.2	9	35.2
Kent	25,500	0	-0-	10	39.2	10	39.2
15,000 to 25,000							
Lynnwood	23,000	0	-0-	9	39.1	9	39.1
Pullman	23,000	0	-0-	12	52.2	11	47.8
Mercer Is.	21,150	0	-0-	11	52.0	11	52.0
Kirkland	18,850	1	5.31	7	37.1	7	37.1
Puyallup	18,500	0	-0-	11	59.5	10	54.1
Aberdeen	18,050	0	-0-	6	33.2	6	33.2
Wenatchee	17,150	0	-0-	12	70.0	11	64.5
Pt. Angeles	17,100	0	-0-	9	52.6	9	52.6
Mt. Lk. Terr.	16,000	0	-0-	3	18.8	3	18.8

*Frequency per 100,000

PEDESTRIANS

Overview

The number of pedestrians killed was down in 1983. The 89 killed was 21.9% fewer than the four-year average. This figure is a decrease of 12 from the 1982 total of pedestrian fatalities. The 1,701 pedestrians injured were 5.0% below the four-year average (Table 7-1).

Table 7-1 **PEDESTRIANS KILLED AND INJURED 1979 — 1983**
STATEWIDE — URBAN AND RURAL

	1979	1980	1981	1982	4 Yr. Avg.	1983	% of Change 1983 to 4 Yr. Avg.
Pedestrians Killed	126	108	121	101	114	89	-21.9%
Pedestrians Injured	1851	1906	1696	1705	1790	1701	- 5.0%

LOCATIONS AND AGE GROUPS OF PEDESTRIAN ACCIDENTS

In 1983, rural areas experienced a decrease in pedestrian fatalities of 30.2% over the four-year average, and the number of pedestrians injured in rural accidents decreased 5.6% compared to the four-year average. The number of urban (i.e. population of 2500 or greater) pedestrian fatalities and injuries decreased by 11.8% & 4.7% respectively, compared to the four-year average (Table 7-2).

Table 7-2

	1979	1980	1981	1982	4 Yr. Avg.	1983	% of Change 1983 to 4 Yr. Avg.
RURAL AREAS							
Pedestrian Killed	70	58	69	55	63	44	-30.2%
Pedestrian Injured	492	551	460	496	500	471	- 5.6%
URBAN AREAS (2,500 population and greater)							
Pedestrians Killed	56	50	52	46	51	45	-11.8%
Pedestrians Injured	1359	1355	1239	1209	1290	1230	- 4.7%

PEDESTRIANS KILLED AND INJURED — BY AGE

In 1983, 25.8% of the pedestrians kiled were between the ages of 5 and 19, while 37.7% of those injured fell into this age bracket. Twenty three point six (23.6) % of the pedestrians killed & 10.0% of the pedestrians injured were 65 years of age and older (Table 7-3).

Table 7-3 **AGE OF PEDESTRIANS KILLED AND INJURED — 1979 - 1983**

	Killed							Injured						
Age	1979	1980	1981	1982	4 Yr. Avg.	1983	% of Change	1979	1980	1981	1982	4 Yr. Avg.	1983	% of Change
0 to 4	9	5	6	5	6	4	- 33.3%	69	86	71	79	76	84	+ 10.5%
5 to 9	6	5	9	6	7	6	- 14.3%	250	255	241	225	243	216	- 11.1%
10 to 14	2	3	6	6	4	4	N/C	203	208	201	209	205	216	+ 5.4%
15 to 19	9	7	13	8	9	13	+ 44.4%	195	206	169	219	197	209	+ 6.1%
20 to 24	16	10	11	9	12	6	- 50.0%	160	145	143	174	156	163	+ 4.5%
25 to 34	14	14	17	15	15	12	- 20.0%	223	231	220	235	227	222	- 2.2%
35 to 44	11	9	8	9	9	10	+ 11.1%	95	115	118	129	114	124	+ 8.8%
45 to 54	10	9	11	2	8	5	- 37.5%	92	109	78	69	87	97	+ 10.3%
55 to 64	10	6	8	11	9	8	- 11.1%	102	87	70	89	87	89	+ 2.3%
65 to 74	7	8	10	13	10	8	- 20.0%	82	93	89	61	81	90	+ 11.1%
75 and Older	23	21	16	17	19	13	- 31.6%	81	81	88	103	88	89	+ 1.1%
Not Stated	1	1	0	0	1	0	- 100.0%	156	115	97	113	120	102	- 15.0%
Total	118	98	115	101	108	89	- 17.6%	1,708	1,713	1,585	1,705	1,682	1,701	+ 1.1%

ACTIONS OF PEDESTRIANS KILLED AND INJURED
1983 — RURAL AND URBAN AREAS

In 1983, 35.2% of the pedestrians killed or injured in rural areas were struck while crossing not at an intersection. Another 21.9% were struck while crossing, entering roadway at an intersection. The most frequently involved age groups were the 5-14 year old and 15-24 year old age groups. They were involved in 30.3% and 28.4% of the total rural pedestrian collisions respectively (Table 7-4).

Table 7-4

RURAL AREAS	No. Killed	% of Total	Total Killed or Inj.	% of Total	Age 0-4	Age 5-14	Age 15-24	Age 25-64	Age 65 & Up	Not Stated
Crossing, entering roadway at intersection	8	18.2%	105	21.9%	2	34	25	27	11	6
Not at intersection	12	27.2%	169	35.2%	9	77	38	30	10	5
Walking with traffic	7	15.9%	37	7.7%	0	2	16	16	1	2
Walking against traffic	1	2.3%	11	2.3%	0	0	5	4	1	1
Standing or working in roadway	4	9.1%	38	7.9%	0	3	12	22	0	1
Playing in roadway	1	2.3%	17	3.5%	2	10	5	0	0	0
Lying in roadway	3	6.8%	7	1.5%	0	0	2	5	0	0
Not in roadway	8	18.2%	72	15.0%	1	14	28	25	3	1
Other & Not Stated	0	—	24	5.0%	0	6	6	7	3	2
TOTAL	44	100.0%	480	100.0%	14	146	137	136	29	18
Percent or Total Killed or Injured					2.9%	30.3%	28.4%	28.3%	6.0%	3.7%

For the urban areas, the greatest amount of pedestrian involvement in fatal and injury accidents occurred at intersections (51.2%) whereas 31.4% of the pedestrians killed and injured were struck while not at an intersection. The 5-14 year old age group was the most predominant age group involved in urban pedestrian accidents, with 23.7% of the total. (Table 7-5).

Table 7-5 **ACTIONS OF PEDESTRIANS KILLED & INJURED — 1983**

URBAN AREAS	No. Killed	% of Total	Total Killed or Inj.	% of Total	Age 0-4	Age 5-14	Age 15-24	Age 25-64	Age 65 & Up	Not Stated
Crossing, entering roadway at intersection	20	45.5%	625	51.2%	12	113	111	235	115	39
Not at intersection	13	29.5%	383	31.4%	47	137	53	94	32	20
Walking with traffic	0	—	24	2.0%	0	3	9	10	1	1
Walking against traffic	1	2.3%	11	0.9%	0	1	3	4	1	2
Standing or working in roadway	2	4.5%	48	3.9%	3	3	16	17	4	5
Playing in roadway	1	2.3%	29	2.4%	5	16	4	3	0	1
Lying in roadway	1	2.3%	3	0.2%	0	0	1	2	0	0
Not in roadway	2	4.5%	48	3.9%	2	6	16	19	4	1
Other & Not Stated	4	9.1%	50	4.1%	2	10	12	16	5	5
TOTAL	44	100.0%	1,221	100.0%	71	289	225	400	162	74
Percent of Total Killed or Injured					5.8%	23.7%	18.4%	32.7%	13.3%	6.1%

PEDESTRIAN ACCIDENTS
BY DAY OF WEEK AND HOUR OF DAY

Friday recorded 20.2% of the week's total number of fatal pedestrian accidents and 18.9% of total pedestrian accidents in 1983 (Figure 7-1). The 6:00 p.m. to 9:00 p.m. time period had the highest percentage of fatal pedestrian accidents (25.5%). The three-hour period from 3:00 p.m. to 6:00 p.m. had the largest percentage of total pedestrian collisions with 30.3% of the total (Figure 7-2).

Figure 7-1 **Total and Fatal Pedestrian Collisions by Day of Week — 1983**

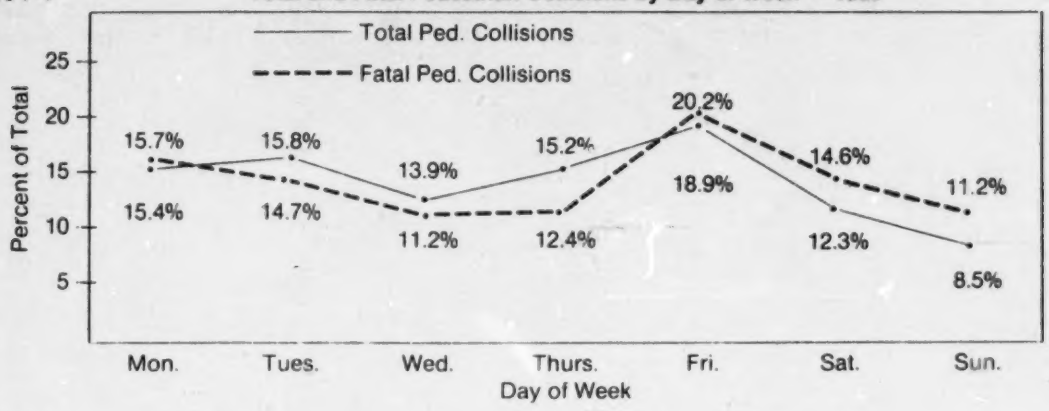
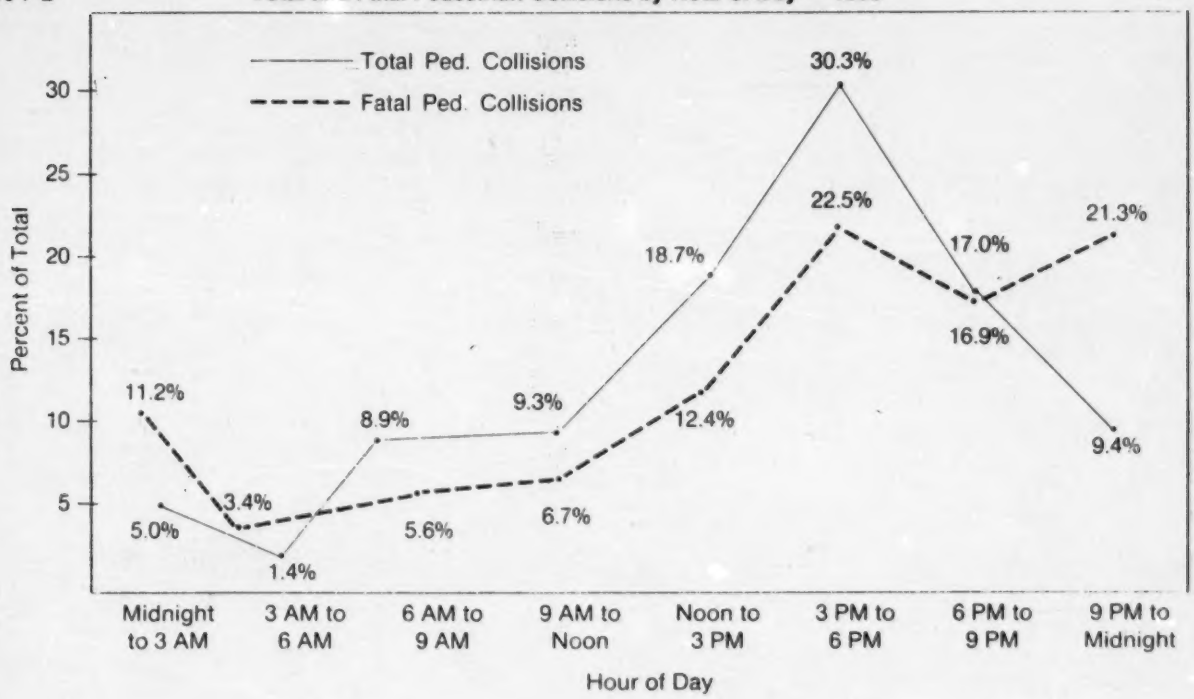


Figure 7-2 **Total and Fatal Pedestrian Collisions by Hour of Day — 1983**



The table below presents the 1983 number and rates for pedestrian traffic deaths, injuries, and total collisions for cities of 15,000 or more in Washington. Seattle had the greatest number of fatalities, but Bremerton had the greatest rate of pedestrian fatalities at 11.28 per 100,000 population. Seattle had the greatest number of pedestrian collisions and pedestrian injuries, as well as the highest rate for total pedestrian collisions (92.7 per 100,000) and pedestrian injuries (95.7 per 100,000). (Figure 7-5)

Figure 7-5

Pedestrian Collision Rate By Population
Cities 15,000 Population and Greater
1983

Population		Pedestrian Deaths	Death *Rate	Pedestrian Injuries	Injury *Rate	Total Pedestrian Collisions	Collision *Rate
250,000 and Over Population							
Seattle	489,700	19	3.27	469	95.6	454	92.7
100,000 to 250,000 Population							
Spokane	170,200	2	1.18	119	69.9	107	62.9
Tacoma	158,400	3	1.89	128	80.8	125	78.9
50,000 to 100,000 Population							
Bellevue	73,900	0	-0-	35	47.4	32	43.3
Everett	56,200	1	1.78	27	48.0	25	44.5
25,000 to 50,000 Population							
Yakima	48,500	1	2.06	37	76.3	35	72.2
Bellingham	45,900	0	-0-	16	34.9	16	34.9
Vancouver	42,600	1	2.35	22	51.6	20	46.9
Kennewick	35,700	0	-0-	12	33.6	12	33.6
Bremerton	35,475	4	11.28	27	75.1	31	87.4
Renton	32,700	2	6.12	16	48.9	16	48.9
Richland	32,000	2	6.25	8	25.0	10	31.3
Longview	30,100	1	3.32	23	76.4	21	69.8
Auburn	29,000	0	-0-	8	27.6	8	27.6
Olympia	28,000	1	3.57	23	82.1	21	75.0
Edmonds	27,000	0	-0-	8	29.6	7	25.9
Redmond	26,300	0	-0-	5	19.0	4	15.2
Walla Walla	25,600	2	7.81	14	54.7	14	54.7
Kent	25,500	0	-0-	10	39.2	10	39.2
15,000 to 25,000 Population							
Lynnwood	23,000	0	-0-	13	56.5	11	47.8
Pullman	23,000	0	-0-	8	34.8	7	30.4
Mercer Is.	21,150	1	4.73	10	47.3	10	47.3
Kirkland	18,850	1	5.31	8	42.4	9	47.7
Puyallup	18,500	1	5.41	10	54.1	10	54.1
Aberdeen	18,050	0	-0-	11	60.9	9	49.9
Wenatchee	17,150	1	5.83	15	87.5	15	87.5
Pt. Angeles	17,100	0	-0-	13	76.0	12	70.2
Mt. Lk. Terr.	16,000	0	-0-	6	37.5	5	31.3

*Frequency per 100,000 population

HEAVY TRUCKS

Overview

In 1983, 6,525 heavy trucks were involved in collisions, for a 3.9% decrease over the four year baseline. Registrations in 1983 totaled 145,595, a 5.7% increase over the four year average. Based on this registration figure, the 1983 collision rate was 448.2 collisions per 10,000 registered trucks, a decrease of 9.0% over the previous four year average.

There were 65 heavy trucks involved in fatal collisions during 1983. This represents a 32.3% decrease over the baseline average. The fatal collision rate of 4.5 collisions per 10,000 registered trucks is a 35.7% decrease over the baseline period (Table 8-1).

Table 8-1 **SUMMARY OF HEAVY TRUCKS**
10,000 GROSS VEHICLE WEIGHT (GVW) AND GREATER INVOLVED IN TRAFFIC COLLISIONS

	1979	1980	1981	1982	4 Yr. Avg.	1983	% of Change 1983 to 4 Yr. Avg.
Total Trucks Involved in Collisions*	8,047	7,164	6,122	5,822	6,789	6,525	- 3.9%
Trucks Involved in Fatal Collisions	116	108	97	63	96	65	-32.3%
Registration of Heavy Trucks**	132,220	136,669	141,042	141,225	137,789	145,595	+ 5.7%

COLLISIONS PER 10,000 REGISTERED TRUCKS

RATES:	1979	1980	1981	1982	4 Yr. Avg.	1983	% of Change 1983 to 4 Yr. Avg.
Total Collisions Rate	608.6	524.2	434.1	412.2	492.7	448.2	- 9.0%
Fatal Collision Rate	8.8	7.9	6.9	4.5	7.0	4.5	-35.7%

*Minimum damage for a reportable collision $300 to the property of any one person
**Estimated

LOCATION OF HEAVY TRUCK COLLISIONS BY SEVERITY

In 1983, 52.5% of the heavy trucks involved in total collisions were in urban areas (Figure 8-1). In 1983 there were 17 heavy trucks involved in fatal accidents in urban areas, compared to 48 in the rural areas. These figures comprise a 26 - 74% urban/rural proportion of involvement in fatal accidents, (Figure 8-2). The 1983 heavy truck involvement in injury accidents was split; 921 urban to 1106 rural. These figures are a 45 - 55% urban/rural split, which varies only slightly from the previous four year average (Figure 8-3).

Figure 8-1 **Heavy Truck Collision Involvement by Urban/Rural Location**

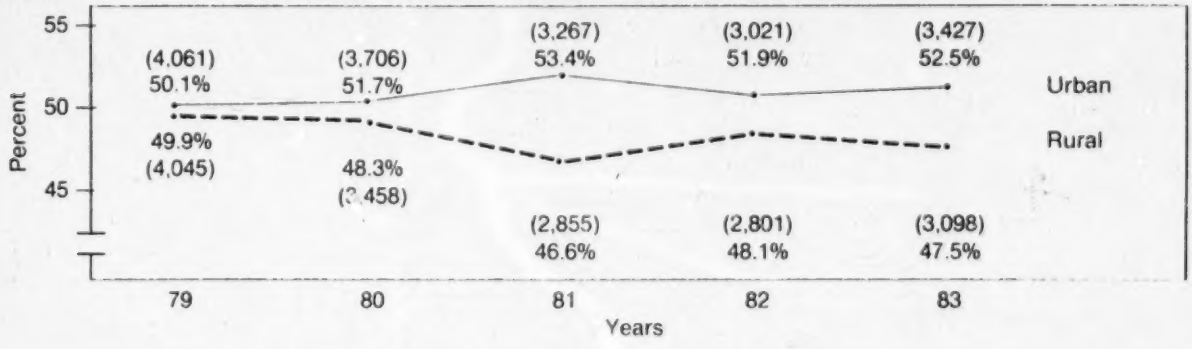


Figure 8-2 **Heavy Trucks Involved in Fatal Collisions by Urban/Rural Location**

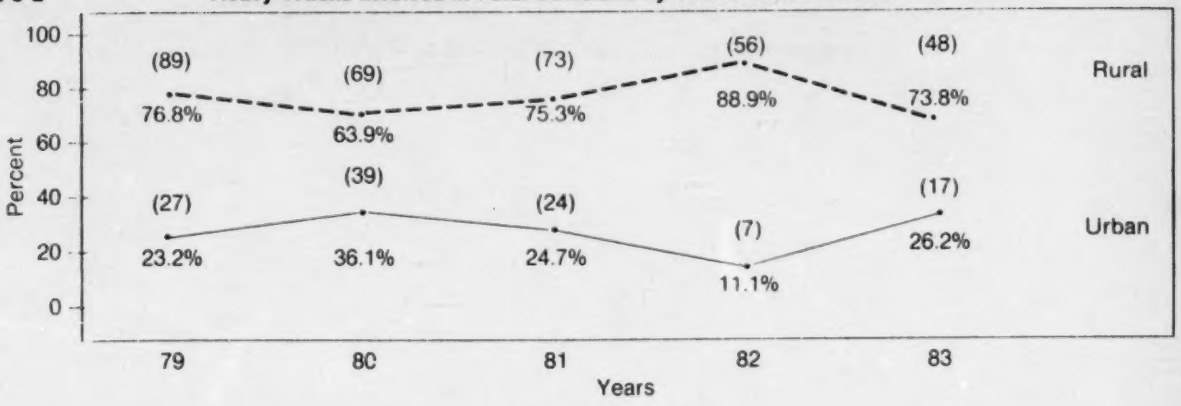
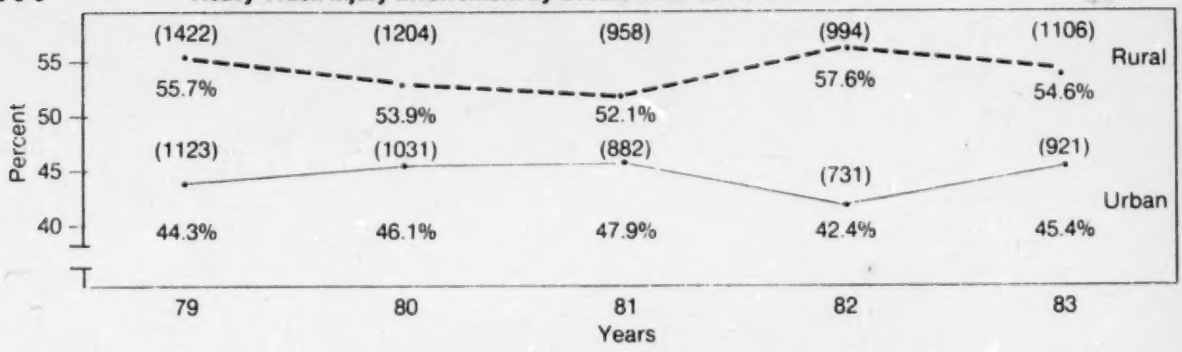


Figure 8-3 **Heavy Truck Injury Involvement by Urban/Rural Location**



AGE OF DRIVERS INVOLVED IN HEAVY TRUCK COLLISIONS IN 1983

In 1983, the 19-year old and under and 20-29 year old age group were the only two age groups to be over-represented in collisions compared to the percentage of licensed drivers each group comprised. The 19 and under group made up only .3% of all licensed heavy truck operators, yet this group was involved in 3.4% of all heavy truck accidents, 1.6% of the fatal accidents and 3.4% of the injury accidents for heavy trucks. The ratio for percent of accident involvement compared to percent of licensed drivers comprised by this age group resulted in an over-representation ratio of 11.3 for the 19 and under age group. The 20-29 year old age group was involved in 31.9% of the total collisions, 41.0% of the fatal collisions and 31.6% of the injury collisions. This group comprises 19.5% of all drivers having a classified endorsement on their licenses. Based on the percent of licensed drivers and accident involvement, this group was over-represented in accidents by a ratio of 1.6. The remainder of the driver age groups are under-represented in total, fatal and injury accident categories (Table 8-2).

Table 8-2

Age	All Accidents Frequency	%	Fatal Accidents Frequency	%	Injury Accidents Frequency	%	*Percent of Classified End. Drivers	**Over/Under represen-tation
19 & Under	188	3.4	1	1.6	62	3.4	0.3%	11.33:1
20-29	1,757	31.9	25	41.0	570	31.6	19.5%	1.64:1
30-39	1,614	29.3	13	21.3	506	28.1	33.1%	.88:1
40-49	1,022	18.5	10	16.4	359	19.9	21.9%	.84:1
50-59	697	12.6	7	11.5	236	13.1	14.7%	.86:1
60 & Over	236	4.3	5	8.2	71	3.9	10.5%	.41:1

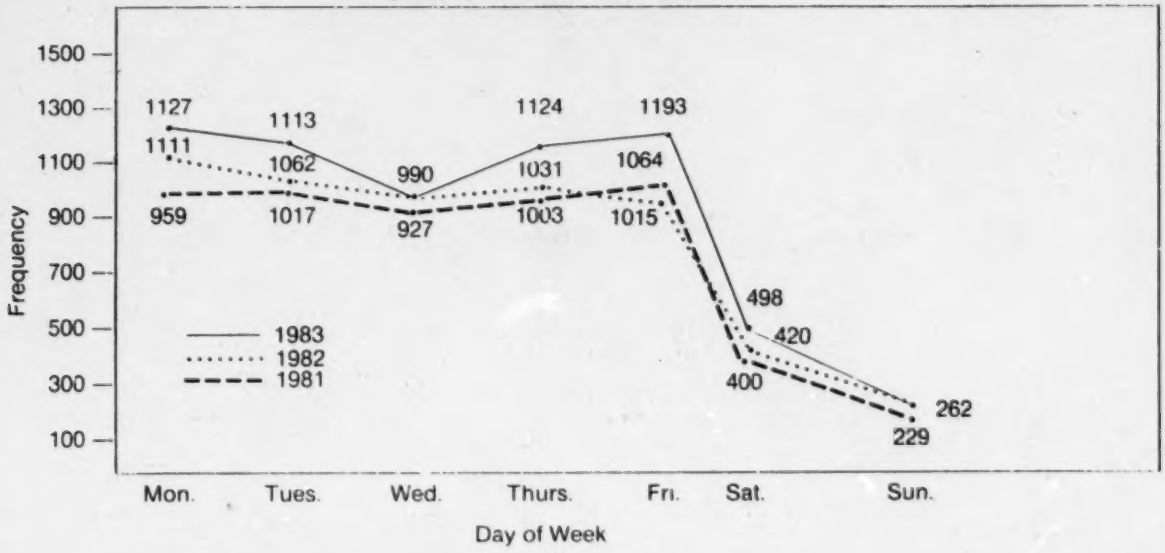
*Classified Endorsement is only required for operators of the larger trucks and truck combinations
**Percent of collision involvement to percent of licensed drivers

HEAVY TRUCK ACCIDENT OCCURRENCE BY TIME

The daily frequency of heavy truck accidents in 1983 was slightly more than the previous two years, though following the same frequency pattern. The weekdays had the largest frequency of heavy truck involvement in collisions. During the weekends there is a substantial decline in the frequency of heavy truck involvement in collisions (Figure 8-4).

Figure 8-4

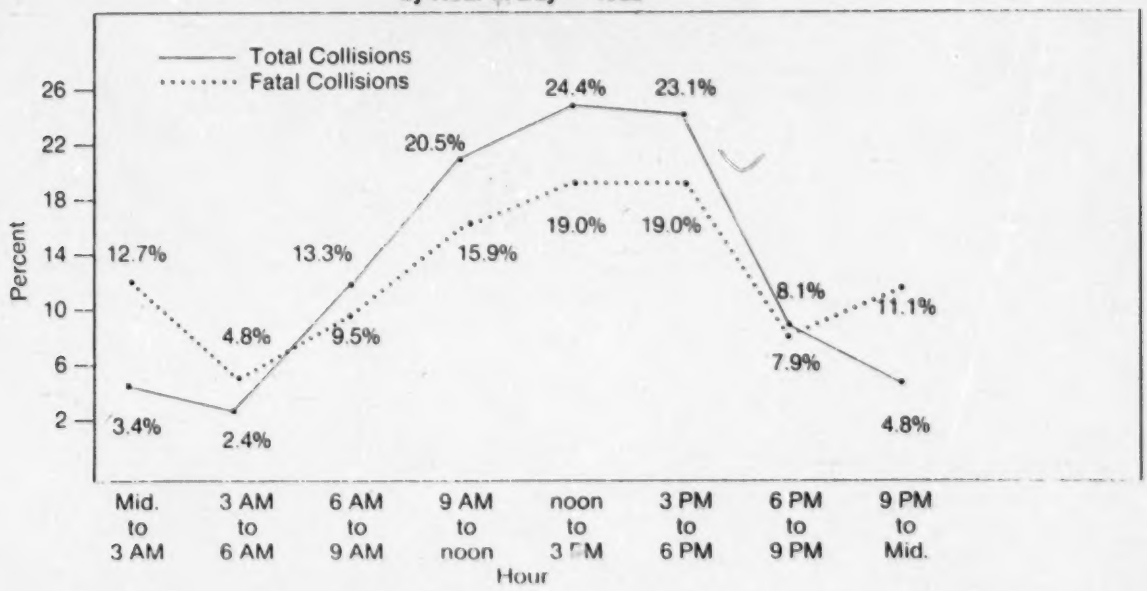
Heavy Truck Involvement in Total Collisions by Day of Week for 1981 - 1983



In 1983, the time period from noon to 3 PM recorded the highest incidence of heavy truck involvement in collisions. There was a substantial build up of collisions starting with the 3 AM to 6 AM time period, peaking at the noon to 3 PM period. The two 3 hour periods from noon to 3 PM & 3 PM to 6 PM each recorded 19.0% of the fatal collisions (Figure 8-5).

Figure 8-5

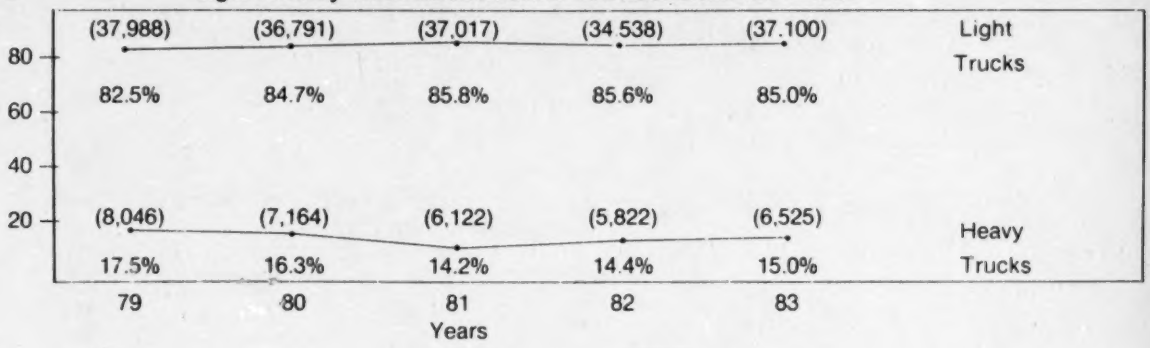
Heavy Truck Involvement in Total and Fatal Collisions by Hour of Day — 1982



TOTAL COLLISIONS — LIGHT TRUCKS vs. HEAVY TRUCKS

In 1983, there were 37,100 light trucks and 6,525 heavy trucks involved in collisions. This is a 85.0% - 15.0% ratio between light and heavy trucks which flatens a four-year trend for light trucks increasing involvement and heavy trucks decreasing involvement in total truck collisions (Figure 8-6).

Figure 8-6 **Light & Heavy Truck Involvement in Total Collisions 1979 - 1983**



COLLISIONS BY FIRST HARMFUL EVENT

During 1983, heavy trucks were involved in 4,577 collisions involving another moving vehicle. This represents 72.6% of all heavy truck collisions. They were involved in 409 collisions or 6.5% in which the other vehicle was parked. Heavy trucks were involved in 689 collisions with fixed or other objects, which represents 10.9% of the total. Overturning, other non-collisions, and all other collisions accounted for the remaining 10.0% of the collisions (Table 8-3).

Table 8-3 **HEAVY TRUCK COLLISIONS BY FIRST HARMFUL EVENT — 1980, 1981, 1982 & 1983**

	1980		1981		1982		1983	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Collision with other moving motor vehicle	4,901	71.3	4,224	71.7	3,984	71.2	4,577	72.6
Collision with parked motor vehicle	541	7.9	468	7.9	422	7.5	409	6.5
Collision with fixed or other object	745	10.8	648	11.0	646	11.5	689	10.9
Overturning	406	5.9	317	5.4	331	5.9	394	6.2
Other non-collision	157	2.3	134	2.3	135	2.4	145	2.3
All other collisions/Pedestrian, Pedalcyclist, etc.	122	1.8	100	1.7	81	1.5	93	1.5

HEAVY TRUCK DEFECTS

In 1983, 12.6% of the heavy trucks involved in all collisions had one or more defects. This compares to 11.3% in 1982 and 10.8% in 1981. Defective brakes constituted 40.0% of the defects detected. Other defects and their percentages were smooth tired 16.5%; puncture or blowout 6.7%; defective rear lights 7.7%; defective steering 4.0% and all other defects 34.2%. (Table 8-4).

Table 8-4 **DEFECTS OF HEAVY TRUCKS INVOLVED IN COLLISIONS — 1980, 1981, 1982 & 1983**

	1980		1981		1982		1983	
Condition of Vehicle	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Defective Brakes	199	34.3	202	40.3	185	36.4	228	40.0
Defective Headlights	4	0.7	4	0.8	2	0.4	5	0.9
Defective Rear Lights	50	8.6	37	7.4	46	9.1	44	7.7
Defective Steering Mechanism	15	2.6	22	4.4	20	3.9	23	4.0
Puncture or Blowout	44	7.6	28	5.6	31	6.1	38	6.7
Worn or Smooth Tires	95	16.4	84	16.8	70	13.8	94	16.5
Other Defects	173	29.8	124	24.8	154	30.3	195	34.2

[1]Based on 4,996 trucks involved in total investigated collisions.

PUPIL TRANSPORTATION

Overview

In the 1982-1983 school year there were 256 reported school bus collisions in which 2 persons were killed and 166 were injured. This was a 9.9% decrease over the three year baseline in total school bus collisions; a 1.8% decrease in the number of persons injured.

There were 6,286 registered school buses in the 1982-1983 school year. This was a 5.1% increase in registrations over the three year baseline period. (Table 9-1).

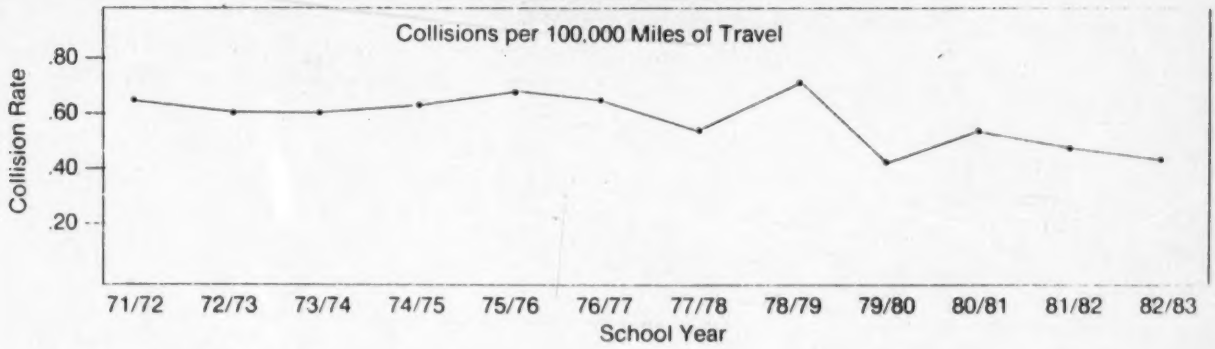
Table 9-1 **FOUR YEAR COMPARISON OF COLLISIONS INVOLVING SCHOOL BUSES**
1979/1980 — 1982/1983

	School Year					Percent of Change '82-83 to 3 Yr. Avg.
	1979 1980	1980 1981	1981 1982	Prev. 3 Yr. Average	1982 1983	
Total Collisions	246	324	281	284	256	- 9.9%
Fatal Collisions	1	1	2	1	2	+
Number Killed	1	1	2	1	2	+
Injury Collisions	73	112	90	92	85	- 3.3%
Injuries	151	201	155	169	166	- 1.8%
Property Damage Only Collisions	172	211	189	191	169	-11.5%
School Bus Registration	5,761	6,052	6,127	5,980	6,286	+ 5.1%
*Registration Collision Rate	42.7	53.5	45.9	47.5	40.7	-14.3%
Miles Traveled (In Thousands)	59,268.1	57,471.8	58,619.5	58,453.1	64,713.1	+10.7%
**Mileage Collision Rate	.42	.56	.48	.49	.40	-18.4%

*Collisions per 1,000 registered vehicles
**Collisions per 100,000 miles of travel

In 1982-1983 school year, the school bus mileage collision rate was .40 collisions per 100,000 miles of travel (Figure 9-1) This rate was down from the 1981-82 rate of .48 and down over the rate of .49 for the previous three years (See Table 9-1)

Figure 9-1 **COMPARISON OF SCHOOL BUS MILEAGE COLLISION RATE**
71/72 to 82/83 School Year

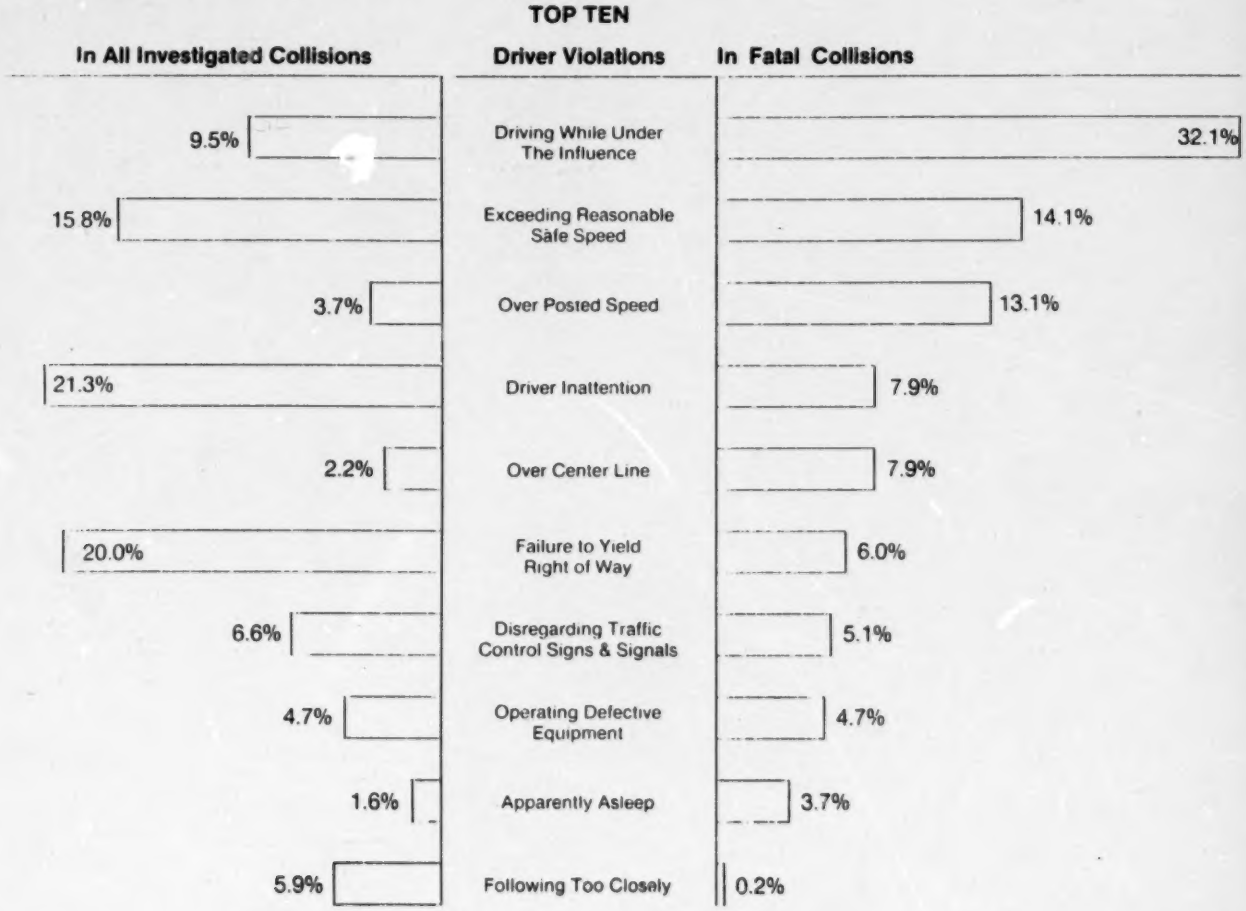


CONTRIBUTORY DRIVER VIOLATIONS

Overview

Driving while under the influence of intoxicating liquor contributed to 32.1% of the driver violations in fatal collisions & 9.5% of all investigated collisions. Driver inattention contributed to 21.3% of all investigated collisions & 7.9% of the violations in fatal collisions (Figure 10-1).

Figure 10-1



VEHICLE DEFECTS

Overview

In investigated collisions during 1983 only 5.2% of the accident-involved vehicles were found to have contributory vehicle defects. The most common defect was worn, smooth tires. This defect was common to 2,964 vehicles and represented a 2.0% decrease compared to the previous four-year average. Defective brakes were the second most contributory circumstance. This defect was found on 1,514 collision involved vehicles last year, a drop of 0.9% compared to the baseline (Table 10-1).

Table 10-1

VEHICLE CONDITION
(In Investigated Collisions Only)

	1979	1980	1981	1982	4 Yr. Avg.	1983	Percent of Change 1983 to 4 Yr. Avg.
Defective Tires:							
Worn or Smooth Tires	3,040	3,302	3,054	2,828	3,056	2,964	- 2.0%
Puncture or Blowout	719	683	557	446	601	462	- 23.1%
Defective Brakes	1,600	1,543	1,585	1,383	1,528	1,514	- 0.9%
Defective Lights:							
Headlights	214	220	184	150	192	149	- 22.4%
Rear Lights	477	482	403	394	439	361	- 17.8%
Other Lights/Reflectors	3	122	117	95	84	95	+ 13.1%
Defective Steering	249	360	334	281	306	308	+ 0.7%
All Other Defects	644	1,316	1,080	1,145	1,046	1,387	+ 32.6%
No Defects	145,861	135,008	136,592	123,345	135,202	131,273	- 2.9%
Total Vehicles Involved	152,807	143,036	144,082	130,067	142,498	138,513	- 2.8%